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THE AUTOMOBILE

HOW BRITAIN'S UNION IS DISCOURAGING SPEEDING

LONDON, Aug. 20.—John Bull's land being a tight little island, it is easy for the police, municipal councils, county councils, village councils and every other body with judicial or assumed authority to take a maternal interest in the welfare of automobilists. On our pleasant, high-hedged dusty country lanes—from flowery Devonshire to grimy Lancashire—automobiles are generally a nuisance to everybody but the automobilist, and the special aversion of the conservative village squire and the one-man village police force. When speeders grew inconsiderate speed traps came into existence. Neighboring villages learned how Slocum - cum - Slocum was filling its coffers at the expense of the "beastly motor cars" and forthwith decided that it would have some recompense for the crops and gardens disfigured by the dust from our once deserted country lanes.

To-day police traps exist from John o' Groat's to Land's End, thickly scattered round every big city and thinning out in the rural districts where villages are four miles apart. Wherever you are touring there is the ever-present joy of knowing that hidden away retiringly in some thick hedge bottom or peeping out between the chinks of some north country graystone wall is a blue-coated constable with a Waterbury watch which has never been known to tell a willful lie.

A WORD OF CAUTION FROM THE MOTOR UNION SCOUT.

But British motorists have got tired of paying five shillings and costs into town and village treasuries and have organized protective associations as complete in their working as the best organized constabularies. The Automobile Association first took up the matter by an active campaign for considerate driving on the part of its members and automobilists in general, and a lively fight against the principal police persecutors. In every district in which the association was represented voluntary and paid teams of scouts have been formed to denounce to fellow members the existence of traps. Technical journals naturally aid to their utmost in this work, publishing weekly a list of places in which the police are showing activity. One weekly magazine publishes a map of England showing about one hundred and fifty traps in operation from the South coast to the Scotch border. Week by week it is brought to date, indications being given on the manner of operation and the time of greatest activity. Newly formed traps being the most dangerous, parties of scouts are kept on the roads to discover and report to passing automobilists where special caution must be observed. In addition to protecting inoffensive travelers likely to be the victim of over-zealous police officers, scouts are enjoined to keep an eye on unreasonable automobilists and either prevent or report all cases of abuse. In order that he may be known of automobilists and his advice accepted with confidence, the scout is provided with an association badge. Where this was not used individual autophobes have taken up the gratuitous work of sending automobilists full speed into known traps.

Scouts and police rarely show much brotherly love. Recently the latter have begun to play the game very low by copying the association badge and appearing in plain clothes. It is, however, a dangerous proceeding, for when discovered by the association, as it inevitably is, the arm of the law is severely dealt with.

Last week the Motor Union of Great Britain and Ireland went into the scout business, designed a badge and put a number of men on the roads most frequently used by automobilists. The scouts, who have been largely recruited from the ranks of retired police sergeants and constables, are instructed to act with the police in warning drivers of dangerous places and advise automobilists where special caution is needed in driving through towns and villages. In addition they are to act as directing guides to the district in which they work, supplying all desired information on hotels, garages, etc. These model automobile policemen keep a close watch on their confrères of the regular force and do their best to frustrate any attempts to trap automobilists for speeding on short sections of open road. Information of this nature gathered by them is at once forwarded to headquarters and distributed through the usual channels.

Unfortunately, there is some jealousy between the two bodies, the A. A. accusing the M. U. of stealing its badge, and neither body showing any desire to be helpful to the members of the rival association. The unattached automobilist with neither of

the club badges on his car receives the cold shoulder when he approaches the roadside scout with a winsome "My dear man, can . . ." and the member of the M. U. is sometimes told that there may be a hidden trap for A. A. members. To be perfectly protected when touring through England it is necessary to carry the two badges in some conspicuous position.

HASTINGS WINS IN BRITISH AUTOCYCLE RUN.

In the open reliability trial organized by the Auto-Cycle Club of Great Britain, Theodore K. Hastings, the only American entrant, has obtained a clean score with an Indian motorcycle. A series of cablegrams received from the American competitor announces his progress in the British competition as follows: "August 12, arrived in London after pleasant voyage. August 19, Hatfield; cordial reception by English motorcyclists; carbureter and machine adjusted to varying conditions of this country, runs like a charm. August 19, Coventry; rain, bad going, road greasy; qualified first day; arrested for speeding. August 20, Dangolten; qualified second day; rain, road greasy, tire trouble. August 21, Aberystwyth; qualified third day. August 22, Cardiff; qualified fourth day; tire trouble, roads excellent, fine running. August 23, Gloucester; qualified fifth day; more tire trouble. August 26, London; finished perfect score.

The Auto-Cycle Club's five-day reliability run was laid through rather difficult mountain country in Wales, the test being rendered more arduous by the heavy rain, which made going difficult at all times. Motorcycling has taken a stronger hold in England than in any other country, the competitions organized by the national club always being keenly contested.

BROOKLANDS TRACK NOT AN ASSURED SUCCESS

LONDON, Aug. 17.—The Brooklands track has certainly not been altogether a success. The opening race meets were characterized by a lack of attention to details which caused great annoyance to competitors and spectators alike. In later events these mistakes have in great measure been remedied, but the improvement comes almost too late. The novelty of the idea has worn off and no longer will the public flock out to Weybridge merely to see a few runaway wins, with interminable intervals between events.

With the object of stirring up public interest once again, the club has decided to have but four classes in all open events in future. These divisions will be limited by the d²n over 2.5 formula, the powers in each case being as maximum 25 horsepower, 40 horsepower, 80 horsepower and 160 horsepower. Class III will include all engines built in accordance with the specification agreed to at the recent Automobile Congress at Ostend, while Class IV will hold any car that could manage to stay on the track at the corners. It has also been found advisable to shorten the races considerably and five miles will be the maximum distance for ordinary events.

Even with its defects, Brooklands has already served a useful purpose by showing up some weak points yet remaining in the modern automobile. The extraordinary number of breakdowns has been a feature of almost every race, and cars which might normally be considered beyond reproach developed all kinds of ailments when forced along all out for a dozen miles. Water circulation troubles have been most prominent, closely followed by carbureter derangements. Rather an unforeseen source of trouble has been the fine cement dust from the track, which has played havoc with insufficiently cased-in joints and bearings, particular sufferers in this respect being cars on which the under screen had been discarded. All these points will, without doubt, be carefully noted and trouble obviated in future productions—showing the advantages and influence of the racing game in the evolution of the perfect automobile.

Good Sport and Improved Management at Bank Holiday Meet.

Public interest revived considerably in the Bank Holiday meet. There being a shilling gate, society folk kept away, their absence, however, hardly being noticed in the 15,000 crowd from Greater London.

The race for the White steam car plate, in which only 30-horsepower White steamers, 1907 model, were eligible, provided excellent sport. There were eight entries, but Earl Russel's and Lord Blythswood's cars failing at the last moment, the starters were reduced to six. For the six miles F. Coleman's and Colonel J. Roper Wright's steamers raced bonnet and bonnet, the former finally making a sprint and winning by half a length. F. Payne's steamer got third position, nearly a mile behind, and the three others finished well bunched far in the rear.

WHITE STEAMERS, ENTERED BY PRIVATE USERS, HAD THEIR OWN RACE ON THE ENGLISH AUTODROME.

MOORE-BRABAZON LEADING WITH A BELGIAN MINERVA IN THE RACE FOR THE WALTON STAKES.

America was also represented in the Oatlands Selling Plate, which could hardly be called a race, for it united such diversified models as two 10-horsepower Cadillacs and 40-horsepower Napiers, very imperfectly equallized by a weight limit. Edge's 38-horsepower Napier came first, Charles Jarrott's Sizaire & Naudin second, a 10-horsepower Darracq third and the two Cadillac cars fourth and fifth, followed by a Napier and a Queen. The winning owner received $750 and his car was sold at auction for $1,075.

The race of the day was the running of the Prix de la France of 800 sovereigns for the entrant of the winner, and 200 sovereigns for the entrant of the second. Only machines which complied with the regulations of the French Grand Prix were eligible, their gasoline allowance for the 15¾ miles being proportionately the amount alloted for the race in Franec. D. Resta, driving a Mercedes, proved the winner, against a field consisting of three each of Mercedes, Napier and Dietrich, and one each of Motobloc and Darracq. When the gate went up J. E. Hutton's Mercedes took the lead, with Resta's Merecedes second, the others in order being Newton's Napier, Motobloc, Mercedes, Edge's Napier, and Dietrich. On the fifth round, after an exciting tussle, Hutton's Mercedes passed Resta's machine on the banking. Immediately afterward a series of mishaps occurred to Hutton, the car bonnet flew off, the accelerator pedal broke and a water pipe burst. This allowed Resta to get ahead again and finish first, but did not prevent Hutton securing second place on a deflated rear tire. Gabriel and Duray drove Dietrichs and Demogeot handled a Darracq.

J. C. Moore Brabazon, driving the Minerva with which he was victorious on the Ardennes circuit, captured the Walton stakes of 200 sovereigns, Huntley Walker's Darracq being second and two Minervas third and fourth.

In the contest for the Belgian plate, competitors for which had to comply with the regulations of the Ardennes circuit race, Napiers took first and second positions, Minerva third, Napier fourth, Moore-Brabazon's Minerva fifth, Huntley Walker's Darracq sixth and a Napier last.

A keen race was run for the International plate, for cars to be driven by subjects of the country of origin of the machine. S. F. Edge's Napier proved the winner, closely followed by Gabriel on a Dietrich. Tom Thorneycroft's Thornycroft car was third.

Official Results of the Scottish Trials.

The recently published results of the Scottish Trials are of great interest on this side, in that out of nine cars qualifying for first awards all but two are British, the exceptions being two Mass cars from France. To the American reader, in whose mind "all-British" does not arouse feelings of noble pride, the points of interest in this Scottish Trial are the general absence of tire trouble and the big fuel economy of the competing cars. The tire makers must indeed be given big credit for the advances they have made.

When a hundred cars can cover a 750-mile course over every class of road, and in no single case have tire stoppages totalling to one hour, one trouble of motoring is clearly on the wane. This satisfactory demonstration is the more conclusive by the backing it has had in other European automobile competitions.

Hardly less remarkable is the low fuel consumption, which was throughout carefully checked by the observers. First place in this line is given to the 24-30-horsepower Arrol Johnston, credited with 41.4 ton miles per gallon of gasoline and 24 car miles per gallon. Next in merit comes the 16-horsepower Albion, with 37.6 ton miles and 23.6 car miles for each gallon. To take a few other notable examples, the 50-horsepower Rolls-Royce did well with 32 ton miles and 17 car miles per gallon, while with the same quantity of fuel the 40-horsepower Berliet and the 35-horsepower Iris could each cover 22 miles of road. The biggest distance per gallon, irrespective of weight, was made by the 10-horsepower Chambers in Class I, which touched 37 miles.

Over 14,000 Miles for the Rolls-Royce Non-Stopper.

The longest officially observed reliability trial has just ended with the conclusion of the 15,000th mile of the 50-horsepower six-cylinder Rolls-Royce, and only then because the R. A. C. decided that the official observers had had quite enough fresh air for the present season. This big run was commenced at the Scottish Trial, but hardly had the car started on the second day's journey when the gasoline tap closed itself and the car came to a standstill—though nobody but an official observer would mark down the twenty seconds taken to get going again as a stoppage for mechanical trouble. From this time onward the car behaved in an exemplary manner, and for six weeks four sets of drivers and observers ran the car from London to Glasgow and back, 400 miles being traversed every twenty-four hours, with stop for Sundays only. To the end of the 15,000 miles no further stoppage occurred, so that the world's observed non-stop record stands at 14,371 miles to the credit of the Rolls-Royce. Such a performance speaks for itself and hardly needs any further comment. Certain it is that this record is not likely to be in danger of being increased for some time to come. Examination of all the running parts of the car is being made at present by the club's technical committee and when any necessary renewals have been effected the entire running costs of the run will be published.

TO TRAVEL 62 MILES AN HOUR ON WATER.

PARIS, Aug. 20.—Surrounded by half a dozen mechanics in his private workshop, at Neuilly, Santos-Dumont is actively at work, while all good Parisians are idling at the sea shore or in the mountains. A $10,000 bet depends on the activity of the next few months, and the young Brazilian aeronaut is not the man to be beaten easily. At a recent dinner, held to celebrate a bet between M. Archdeacon and M. Charron relative to a hydroplane performance, Santos-Dumont formed one of the party, and was led to take up a wager with the head of the C. G. V. automobile firm that he would travel over the water within eight months at a speed of 100 kilometers (62 miles) an hour.

"Up to the present those who have given attention to hydroplanes," declared Santos-Dumont, "have made the mistake of constructing machines far too heavy. To obtain high speed on water, as well as on land, weight is of primary importance. The apparatus I am now building consists of this aluminum and wood carcass, 32 feet long, cigar-shaped, to be covered by a rubber envelope and filled with compressed air. At the forward end it will rest on the water by means of a transverse float 13 feet in length, and by a smaller float at the rear—about 5 feet in length.

"My motor will be a 16-cylinder Antoinette, developing 120 horsepower. It will be placed at the forward end of the hydroplane just above the larger float, and will weigh, all accessories included, not more than 330 pounds. The total weight of the hydroplane will be 550 pounds. No, it is impossible to say when the hydroplane will be ready for its first test, but I am sure of traveling 100 kilometers in the hour before January 1."

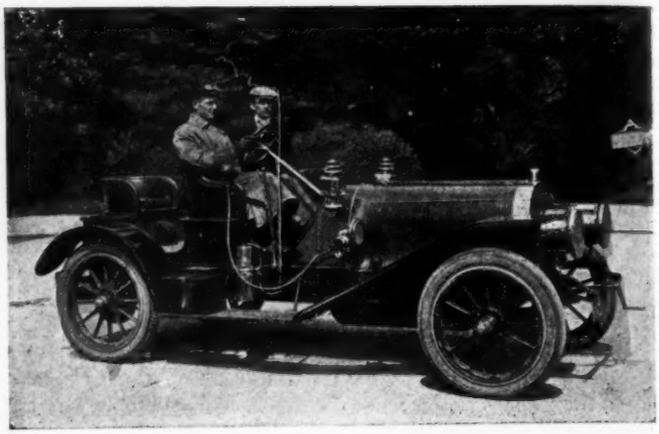
PIERCE CO. OPENS TOURIST OFFICE IN PARIS.

PARIS, Aug. 19.—A remarkable increase in the number of American automobiles touring in France has been noticeable during the past two seasons. In 1905 an American family touring Europe in an American machine was a distinct novelty. In 1906 scores of the best known makes of cars from across the Atlantic could be found in the principal Parisian garages and in the large provincial touring centers. This year the number has further increased. As a convenience to their numerous clients who now tour Europe in Pierce machines, the George N. Pierce Company has found it necessary to open offices in Paris, where spare parts can be obtained and where tourists may find all information on European travel. N. Smith Goodsill, for many years an American resident in Paris, has charge of the establishment. During the present season no fewer than forty Pierce machines have reported at the French headquarters. Other American automobiles frequently seen touring in France are Packard, Lozier, Rainier, Stearns, White, Winton and Oldsmobile.

3,071 EUROPEAN MILES WITH ONE SET OF TIRES.

H. M. Sternbergh, president of the Acme Motor Car Company, is now touring Europe, and in a letter he writes:

"The other day in our Acme we ran to Bern, on to Morat, near Neufchatel, and returned, making seventy-one miles in less than four hours, over fine roads and through charming country, without a hitch or drawback of any kind. This is pretty good, considering that we had to slow down frequently for sharp curves in the road and in passing all sorts of vehicles, such as two and four-horse wagons, two-cow wagons, one-horse and one-cow wagons, dog and man carts, baby carriages, and men, women, children and dogs afoot. We came all the way in the car through Holland from Rotterdam, along the Rhine, over the Taunus Mountains, where we encountered snow banks in the road, and up and down steep hills. We then came through Wiesbaden, Darmstadt, Stuttgart, and Heidelberg, through the Black Forest to Frieburg, Schaufhausen, Zurich and Lucerne to the delightfully quaint and interesting little Swiss town of Thun, making all told 3,071 miles, with but one set of tires."



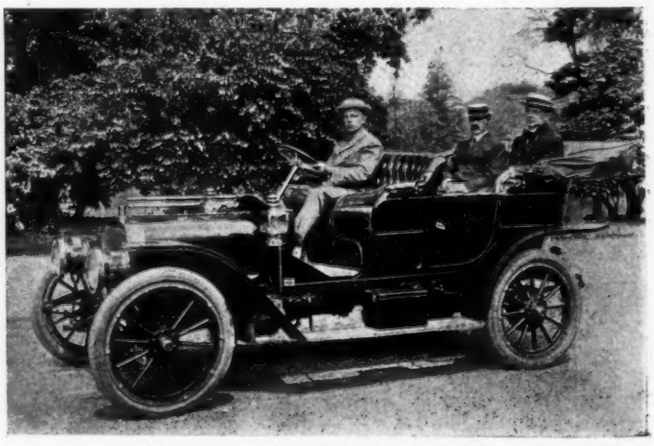
R. G. KELSEY IN HIS NEW 50-HORSEPOWER HAYNES.

SOME NEWS FROM GERMANY.

BERLIN, Aug. 17.—The German Motor Volunteer Corps is sending a great number of cars to the Imperial maneuvers early in September, and although the most important work will be put into the corps' hands, the military authorities have had to hire several other cars outside the corps in order to meet all requests for automobiles made by the various departments and staffs. The importance of the automobile in modern warfare is thoroughly recognized in the Fatherland.

The South-German tour for this season has met with the same fate as the West-German event—postponed until next season—and the promoters of both contests have only to thank the fierce opposition of the South-German press for these lamentable endings to labor extending over a period of several months. The South-German tour, although national, would well have vied with the last Herkomer as far as importance for Germany event, as it had a large number of entries, close on 150, and magnificent prizes had been donated. After Wurtemberg and Baden had refused permission for the tour to traverse their territories, the committee came to the conclusion that it would be unwise to work out a new and wider route for Prussia. Hesse and Bavaria, as the Prussian Government, while giving the last West-German tour full permission, at the same time nullified this by a most hapdicapping set of regulations, turning the event into a procession with no passing of any kind, and a like result was also feared for here.

An interesting English-German suit will be heard after the law vacations in England, as the German Daimler Motor Company has taken steps in the London High Court of Justice to prevent the newly founded British and Colonial Daimler-Mercedes syndicate from using the words Daimler-Mercedes.



THE NEW WATER-COOLED CORBIN APPEARS IN PUBLIC.

PEKIN TO PARIS BY AUTOMOBILE IN 62 DAYS

PARIS, Aug. 16.—Drizzling rain damped the boulevards, but was incapable of lowering the enthusiasm of Parisians on the arrival of Prince Borghese and his Itala car home from the 8,000-mile run from Pekin. Boulevard Poissonnière again brought out its fourteenth of July flags and decorations; *Le Matin* establishment reveled in tricolor flags outside and within had transformed its business offices into a banqueting hall, where champagne flowed and where eatables were distributed in gratuitous profusion.

On the heights of Champigny crowds of automobilists, cyclists and foot passangers had congregated to escort the procession of Itala cars, with the prince at its head, into the city.

HOME FROM CHINA—TRIUMPHAL PROCESSION OF ITALA ON JOINVILLE BRIDGE, EIGHT MILES FROM FINISH.]

Over the Marne at Joinville, the last river to be crossed, through the Bois de Vincennes, the populous district of the Throne and down to the Grands Boulevards, where a detachment of Republican Guards gave official dignity to the travelers, the procession increased in volume and importance. Cyclists held on to the sides of the victorious car, glorying in the opportunity to risk life and limb—for the Parisian cyclist considers himself the half brother of the automobilist; occupants of cars worked themselves into a frenzy, and the idle boulevardier cheered as he felt in honor bound at anything pertaining to the automobile industry which the patrie created.

Sixty-two days ago—on June 10—Prince Borghese's Itala, together with two De Dions, a Spyker car and a Contal tricar, left Pekin for Paris in response to a challenge issued by the Parisian journal *Le Matin*. It was agreed that the five contestants should keep together until Lake Baikal was passed and be helpful to one another, the contest being undertaken to prove the ability of an automobile to cross two continents under its own power, irrespective of speed. A route was planned out by the *Matin* and a number of gasoline stations fixed at intervals. Prince Borghese, however, evidently decided at the outset to push ahead of his companions, for he arranged for his own supplies in China through his brother, a chargé d'affaires at Pekin, and had his own gasoline stations established in Russia and Siberia through influential friends in those countries. It was an easy task to outstrip his companions, for the Itala car has a 40-horsepower engine and a runabout body, whereas the other machines are not over 20-horsepower and carry a fully equipped tonneau. The Contal tricar had but a modest 10-horsepower engine to propel it over untraveled regions.

When Prince Borghese decided to undertake the journey his request for a machine was at first refused by the Itala Company. Finally they acceeded to his request by furnishing a 1907 model 40-horsepower car, set on specially high wheels and with its under body cleared as much as possible to provide against damage from the rough country to be traversed. Two bucket seats were fitted in front and a single seat placed in the center of the rear platform, flanked on each side by a large gasoline tanks capable of containing sixty gallons, calculated to be sufficient for 625 miles. Across the rear of the platform was a box in which tools and spare parts were carried, and the remaining space was used for two tanks, one to hold twenty gallons of lubricating oil, the other for water, which it was expected might be needed in the desert. Pirelli & Co., of Milan, supplied the tires to special order, sending large quantities to various stations along the route. It was found, however, that very few tires were needed, the total consumption being sixteen shoes and the same number of inner tubes. In place of mud-guards four stout wooden planks, one inch thick and five feet in length, were used, two being fixed obliquely at each side of the car to a footstep near the middle of the frame. When an obstacle was met with these were taken off and used as a

bridge. The entire car was of Italian construction, with the exception of the low-tension magneto, supplied by the Simms-Bosch firm of Paris.

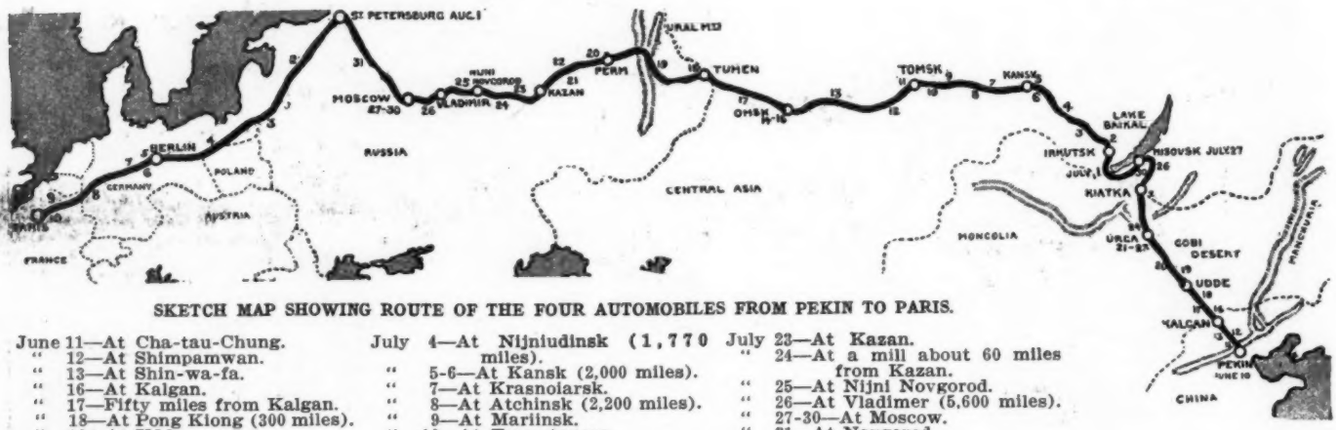
Chinese Country Proved Most Difficult of the Tour.

On the third day out from Pekin the Itala was imbedded over the axles in a morass held up by immense roots of trees which had to be cut away with axes before the car could be liberated. Two days later another morass detained them for an hour, and when this was overcome the car had to be dragged through eighteen miles of deep sand by coolies and mules. The first part of the journey from Pekin to Kalgan was practically the only one where outside aid had to be obtained. Animals were used at first, but it was soon found that natives were better, owing to their greater quickness in obeying commands. Over this stretch of country the special mud-guards were found invaluable when used under the wheels.

At Pong-Kiong the newspaper correspondent accompanying the prince sent the first message, the only one which had been dispatched within a radius of 100 miles within six years. At this point Pons, driving a Contal tricar, abandoned the contest. The Itala had got a big lead, the De Dions and the Spyker had been thrown away to reduce weight on entering the desert; consequently little aid could be given by the engine when the bog was struck. Mongols, armed with long beams which they used as levers, and a big team of oxen finally extricated the car. The automobile was in an even worse position the next day, when, in order to get it out of the morass, the body had to be removed and four hours hard tugging indulged in. After the mud-guards had been cast off the water tank was abandoned, nothing being carried on the car but the crew's personal effects, tools and four spare tires. When rivers had to be forded the magneto was always removed, for it could never be ascertained accurately beforehand to what height the water would rise. On three occasions every article was removed from the machine and oxen dragged it through the water, which once completely covered the car, but without causing any damage. The task occupied three hours.

Daily Attention to Engine Was Well Rewarded.

Much of the credit for the safe arrival of the Itala, says Prince Borghese, is due to the painstaking work of the mechanic. During the day he occupied a little nest on the rear platform with a gasoline tank on each side and a tool box behind him.



SKETCH MAP SHOWING ROUTE OF THE FOUR AUTOMOBILES FROM PEKIN TO PARIS.

June 11—At Cha-tau-Chung.
" 12—At Shimpamwan.
" 13—At Shin-wa-fa.
" 16—At Kalgan.
" 17—Fifty miles from Kalgan.
" 18—At Pong Kiong (300 miles).
" 19—At Udde.
" 20—At Tuerin (650 miles).
" 21-23—At Urga.
" 24—Daturdaba Mountains.
" 25—At Kiatkha.
" 26—At Verkhnoudinsk.
" 27-30—At Misovsk (1,260 miles).
July 1—At Tankoe.
" 2—At Irkutsk.
" 3—At Zima.
" 4—At Nijniudinsk (1,770 miles).
" 5-6—At Kansk (2,000 miles).
" 7—At Krasnoiarsk.
" 8—At Atchinsk (2,200 miles).
" 9—At Mariinsk.
" 10—At Turuntayeva.
" 11—At Tomsk (2,500 miles).
" 12—At Kolivan.
" 13—At Kainsk.
" 14-16—At Omsk (3,000 miles).
" 17—At Ishim.
" 18—At Tumen.
" 19—At Ekaterinburg.
" 20—At Perm.
" 21—At village near Perm.
" 22—At Melet.
July 23—At Kazan.
" 24—At a mill about 60 miles from Kazan.
" 25—At Nijni Novgorod.
" 26—At Vladimer (5,600 miles).
" 27-30—At Moscow.
" 31—At Novgorod.
Aug. 1—At St. Petersburg.
" 2—Near Dvinsk.
" 3—At Kovno.
" 4—At Stargard.
" 5 and 6—At Berlin.
" 7—At Bielefeld.
" 8—At Liège.
" 9—At Meaux.
" 10—AT PARIS (between 7,000 and 8,000 miles).

DAILY PROGRESS OF THE CONTESTANTS.

Figures on map mark daily progress of the Itala on its 8,000-mile journey from Pekin to Paris. Map is reproduced from English "Motor."

were traveling together with the Contal slightly in the rear. Owing to some repair the little tricar was left behind by its larger companions, but pluckily held on its way until the emptying of its gasoline tank brough it to a final stop. According to the French driver, no attempt was made to help him, although the worst stage of the journey had been covered and he was in a position to continue, and he was consequently obliged to work back to Pekin on foot, disappointed and disgusted, then proceed to Paris by train.

The most fearful part of the journey was across the Gobi desert, a distance of about 1,000 miles, as nearly as could be ascertained. Frequently the heat in the desert reached 122 degrees F., parching the throats of the travelers and making breathing most oppressive. No road existed, not even a track was visible, the telegraph posts alone indicating the direction of travel. No help could be had from a compass, for the Itala did not carry one.

The 60-gallon gasoline tanks proved specially valuable on this stage of the journey, allowing the Italian car to continue uninterrupted, while the Spyker was held up awaiting supplies and the Contal was abandoned. But Prince Borghese had his own troubles. At Ourga the Itala stuck in a morass and fell over on its side. To the deep regret of the team the mud-guards When the night stage was reached he made a thorough inspection of the engine, often working long after the others were asleep, laboring so conscientiously that the car was never delayed by mechanical troubles.

On June 30 a bridge broke down, precipitating the car and its occupants into a torrent from which they escaped with difficulty. The car suffered much damage and was only salvaged after three hours work. For a large portion of the journey the railroad tracks ran parallel with the road. An attempt was made to run the car on the track, one wheel being between the rails, the other on the outside. It was never known when a train would be met, for drivers would run ten or twelve hours late without any compunction. After a very close escape from a collision, owing to the outside wheels sticking in the sand, it was decided that this was not a very safe method of travel and the boggy track was again followed.

Before reaching Omsk, in Central Asia, the seizing of the brake bands caused overheating and set the car on fire. Axes had to be used before the flames could be extinguished. Just when the Ural mountains had been crossed and European ground was entered upon, the left back wheel spokes became loose. They were soaked in water all night, but this was not sufficient to prevent the wheel collapsing the next day. A local workman,

who had never before seen an artillery wheel, rigged up a makeshift, which gave indifferent service until a substitute could be sent out. The second rear wheel was changed as a precaution. At Moscow both rear springs broke, and one front one having become weak was changed to prevent future delay.

From Moscow an unending series of fetes awaited the leader of the Pekin-Paris tour. The Automobile Club of Russia organized a procession of automobiles, among which was an American Buick, a large English omnibus and a number of French cars to go out to meet the Itala, a Cossack guard escorting the party in triumph into St. Petersburg.

Belgium Provided the Skeptical Police Officer.

After forty-one days' traveling through the land of the Czars, the German frontier was crossed at Wierzbolor and Berlin was reached on August 5. An enthusiastic reception was given by the Imperial Club, but the travelers were too anxious to reach their destination to stay longer than two days, and on the 6th made their departure accompanied by half a dozen Italas. Except for a stoppage in Belgium by a gendarme, who refused to believe that the prince was other than a smuggler or at best a law-breaking automobilist, no incidents marked the remainder of the journey until the Parisian wave of enthusiasm broke out.

When the car had been stripped of its mud it was found that it had lost about 250 pounds in its 8,000-mile journey, all unnecessary articles having been shed en route. For a few days the Itala occupied a position of honor in the windows of the *Matin* offices; it has now taken to the road again with Milan as its destination, where illuminations and banquets will be the lot of the modest travelers once more.

The exact mileage from Pekin to Paris is not yet known, the Itala car not carrying a distance recorder, owing to the owner's desire to save weight; it is calculated, however, to be between seven and eight thousand miles. Sixty-two days were occupied in making the journey, 12 of which were spent in different towns making adjustments, waiting for stores or being entertained by the enthusiastic populations. Prince Borghese believes that the trip could have been accomplished in 55 days and that 45 days might be sufficient to make the journey from Pekin to Paris at the right time of the year.

A cable from Cormier, the head of the De Dion team, announces that he is at Moscow together with the Spyker. Enthusiastic crowds gather round the three cars, examining them in detail and admiring them without stint. They are eighteen days behind the Itala and in order to gain time have decided to refuse invitations, avoid St. Petersburg, and make for Berlin.

1908 GRAND PRIX DATE AND CONDITIONS ANNOUNCED

PARIS, Aug. 20.—Hardly have the echoes of the 1907 Grand Prix died away than announcement is made of the great French race for next year. According to an official notice, just issued by Secretary Sautin, the 1908 Grand Prix will be run between June 20 and July 5, the exact date to be decided later. Regulations adopted are those decided upon at the Ostend conference, and are officially condensed into three brief paragraphs:

"All cars taking part in the 1908 Grand Prix must have a four-cylinder motor with a bore of 155 millimeters (6.1 inches), or this equivalent when any other number of cylinders are used.

The cars in running order, but without water, gasoline, tools, spare parts or extra tires, must weigh a minimum of 1,100 kilos (2,425 pounds).

"In this weight of 2,425 pounds, oil in the motor and gear-case will be included."

No official announcement has been made regarding the circuit, but, as most of the members of the Sporting Commission are in favor of the Dieppe circuit again and Dieppe naturally has no objections to make, it is exceedingly probable that the 1908 Grand Prix will be held over the same ground as the race of this year. The proposal is afloat to retain the Dieppe circuit as a permanent course, on which not only the Grand Prix, but all other events of the A. C. F. would be contested. Such a move has become necessary owing to the expense of organizing a military-guarded race on a fresh course each year. Excepting the last event, every international race in France has entailed a heavy loss on the French club. With a fixed circuit this loss would be changed to a substantial profit. If the Dieppe circuit is decided upon as a permanent course, it will probably be reduced in length by cutting out Eu and running the road direct from Londinières to Criel.

A lively technical discussion has been raised on what shall be the equivalent dimensions for engines having other than four cylinders. Certainly four-cylinder four-cycle motors will predominate in the race, but it is felt that an early decision should be arrived at on regulations governing the possible entry of six and eight-cylinder machines and two-cycle motors. Constructors intending to depart from the beaten track must wait until the next meeting of the conference, in December, for a final decision, while those who will adhere to the regulation type of racer can commence building at once.

MILITARY FOR ALL FRENCH TOURING TESTS

PARIS, Aug. 19.—No further contests in which any fixed speed has to be maintained will be allowed over unguarded roads in France, according to a declaration made by M. Hennequin, general secretary of road traffic at the Ministry of the Interior. As the result of the deplorable accident in the Criterium of France touring competition, stopped by order of the Government, an order has been issued that the Rochet Schneider Cup, intended to be held under similar conditions, will not be authorized. This competition has been held for three years without accident, but the Minister declares that it is impossible to allow it to be held again after what has happened in the A. C. F. competition.

Interviewed on the probable attitude of the Government regarding future competitions, M. Hennequin, who is a strong supporter of automobiling, declares that no definite decision has yet been taken, but it is probable, owing to abuses which have developed in recent competitions, that no more events will be allowed on a time schedule. In the Criterium of France, organized with the consent of the Government on a schedule calling for twenty-four miles an hour—the legal speed is only eighteen—many competitors ran at an average of fifty miles an hour over the most thickly populated stages. Their speed during the tour was only slightly inferior to that of the race on a guarded and tarred circuit.

"In future," said the Minister, "we shall only authorize contests on closed circuits, well guarded by troops, and perfectly tarred or oiled. Events such as the Criterium of France will, I hope, never again be seen in this country."

As the result of this decision the question of a permanent autodrome has been brought forward more prominently than ever. French constructors are not adverse to such a scheme provided the circuit is not less than twenty-five miles round and follows the natural outline of the country, without any special banking. A speed course in the nature of that at Brooklands in England is strongly opposed.

AIR-COOLED FRANKLIN, CHICAGO-NEW YORK RECORD BREAKER.

FRANKLIN LOWERS CHICAGO-NEW YORK MARK.

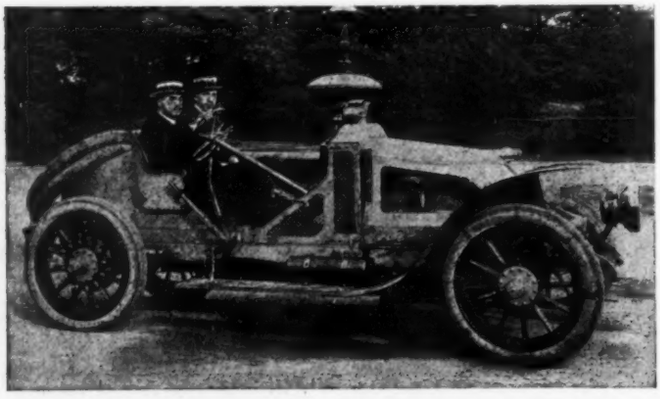
From 56 hours 58 minutes the Chicago-New York time established last year by a six-cylinder Franklin, the 1,240-mile journey has been reduced to 39 hours 53 minutes by a Model D 28-horsepower 1908 Franklin car driven by a team of four men. The start was made from Chicago at 3 A.M., August 21; South Bend was touched at 6:40 A.M., and at 9:20 P.M. the Franklin was in Erie. Between Buffalo and Syracuse the exhaustion of the gasoline supply caused some delay, but when Weehawken, across from New York, was reached, at 7:53 in the evening, seventeen hours had been cut from all previous records. James Daly, Melvin Bates, Charles Talbot and Clayton Carris alternated at the wheel of the Franklin. Only one puncture occurred on the journey, but as Diamond quick detachable tires were used this caused but a momentary delay.

The average mileage for the run is about 30. The exact number of miles traveled is not known, the speedometer breaking off owing to the rapid going over exceedingly rough roads.

RENAULT POSTPONES CHICAGO-NEW YORK RUN.

Owing to the breaking loose of the gasoline tank, the Renault attempt to lower the Chicago-New York record has been postponed until next week. At 3 A. M. last Saturday Paul Lacroix and Bernin started from Chicago on a 35-45-horsepower Renault, with runabout body, reaching Toledo, Ohio, at 1 P.M. Owing to the rough going the gasoline tank broke loose. It was repaired, but breaking loose again and some little trouble developing with the oiler, the run was temporarily abandoned at Cleveland. M. Bernin, who had handled the car on the outward trip, took it back to Chicago at a more moderate pace and arranged for a stronger tank.

It is claimed by the Renault people that at Toledo they were three hours ahead of the Franklin record, the car then running excellently and capable of continuing but for the tank mishap.



RENAULT TRIO HAVING DESIGNS ON CHICAGO-NEW YORK RECORD.

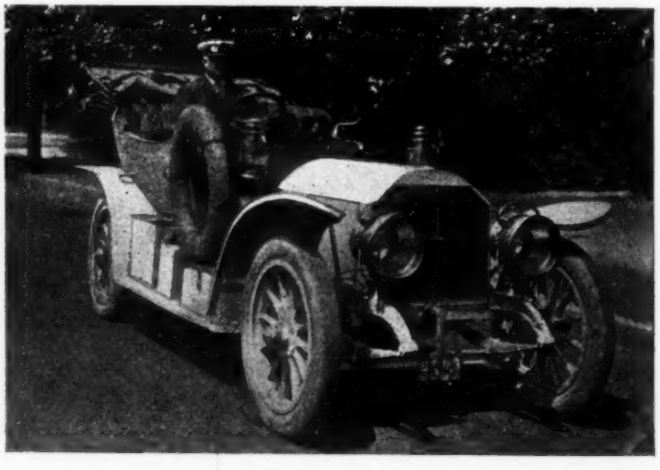
GEORGIA FARMERS OBJECT TO RESTRICTION.

ROME, GA., August 19.—A recent story sent from here to the Atlanta *Constitution* was as follows:

The Farmers' Union of Floyd county has gone on record as opposed to any drastic legislation prohibiting automobiles from traveling on the public highways of the State. As a reason for opposing any severely restrictive measure, the Floyd county union holds that no factor has been or will be so important in the development of good roads as automobiles. The Union realizes that any bill that will prevent automobiles from running on the public highways of the State—and they hold that measures now pending in the Georgia legislature will have that effect practically—will seriously retard the good-roads movement in the State. It is understood that this is the general sentiment of the union all over the State, and the action of the Floyd county union will probably be followed by a similar stand by all of the county organizations.

SIX PERFECT SCORES IN OHIO ENDURANCE RUN

COLUMBUS, O., Aug. 26.—Six automobiles finished with perfect scores in the two-day endurance run for the Ohio *Sun* trophy. They were Pope-Hartford, Buick (2), Thomas, Premier and Oldsmobile. Twenty-three cars started from Columbus, the number of persons in the tour being about ninety. One of the two Logans which entered in the runabout class came short of a clean score by the narrow margin of four points.



HARLAN W. WHIPPLE, EX-PRES. A. A. A., IN HIS 60-H.P. MATHESON.

INDEPENDENTS NOW NUMBER 46 MAKERS.

A grand total of forty-six is now the membership of the American Motor Car Manufacturers' Association, which makes it numerically the largest trade organization of its kind in the world. The forty-sixth member is the Pennsylvania Auto-Motor Company, of Bryn Mawr, Pa., makers of the Pennsylvania car, recently elected. The American Association members this year will have about 26,000 square feet of space in the Grand Central Palace Automobile Show, to be held in New York, October 24-31. This is an increase of 50 per cent. over the space which was last year assigned to the association. The drawing for spaces and the allotments will be made at the New York headquarters, 29-31 West Forty-second street, Saturday, August 31.

DRAWINGS FOR POSITION IN PALACE SHOW.

Drawing for space in the Grand Central Palace show, to be held from October 24 to 31, will take place at the A. C. A. clubhouse, West Fifty-fourth street, New York City, on Wednesday, September 4, at 10:30 A. M. This drawing is independent of the one on August 31, for members of the A. M. C. M. A. only.

CONSTRUCTION OF MOTOR VEHICLE SPRINGS*

By J. G. RUMNEY.

THE laws which govern the construction of springs, to obtain the best results, not only in durability, but in other respects also, have been long known, but are very seldom made use of in the proper way, even by persons who are familiar with the formulas commonly used.

Many manufacturers furnish and guarantee the life of springs which are constructed not upon well-prepared specifications, based upon the properties of the steel and upon a full knowledge of the service in which the springs are to be used, but upon the crudest data imaginable, and without the least inquiry as to the service; and many specifications are received by manufacturers defining conditions which cannot be complied with. The results are increase in cost of production and failure in service.

When springs of this kind break the makers are held responsible and a replacement is requested, and unless they succeed in proving rough usage it is generally complied with; wheras, if conditions or actual requirements were thoroughly understood, the cause of the trouble would be removed and the manufacturers would not be blamed.

The cause of all trouble with springs, aside from poor material and workmanship, is found in an excessive deflection; *i. e.*, a deflection which produces stresses in the material beyond its endurance.

The deflection of a given size of steel is limited to an amount corresponding to the strain the material is able to endure without rupture, and consequently if this is exceeded failures will result. When, therefore, the deflection is forgotten or not considered in the calculations, springs are generally produced which prove anything but serviceable and must be frequently renewed, at great cost and inconvenience.

The deflection is therefore the paramount issue in the construction of springs. There are, however, three kinds or deflection, which may be termed: desirable deflection, permissible deflection, and possible deflection.

The desirable deflection is the amount a spring should be able to deflect in order to avoid shocks and produce good riding over a rough road, and must be provided for in the construction of motor cars so that a sufficient amount of material of proper dimensions may be used.

The permissible deflection is the amount a spring may be deflected repeatedly without breaking or without changes in its original shape.

The ability of a spring to deflect within safe limits depends entirely upon the proportions of the plates, which will be explained further on.

The possible deflection is the total distance a spring may have the opportunity to deflect if allowed to do so, and which is generally not provided for in the construction of springs.

In full elliptical springs the possible deflection is the distance between the centers when free. The distance can be so proportioned to the dimensions of plates that when the centers meet the material has not been overstrained.

In half or semi-elliptical springs the distance may be much greater than the permissible deflection, and if the springs are permitted to deflect the entire distance they are apt to break or take a permanent set, either of which is equally objectionable.

Constructions should, therefore, be made so that the possible deflection does not exceed the permissible deflection, and if this is impracticable in the ordinary construction of frames, etc., some means should be introduced to accomplish same results.

The object of this paper is, therefore, to call attention to the methods which should be followed in the caluculations of elliptical and semi-elliptical springs so as to guard against an excessive deflection, which is the principal cause of broken springs, and thus bring about a better understanding between the makers and users of such springs.

To make the subject clear to those who may not be perfectly familiar with the laws governing strains in materials, some elementary explanations will be used, which it is hoped will be excused by those to whom they may be unnecessary.

It is well known that if a piece of steel or other material in the shape of a bar is supported upon its two ends and a load is applied in the middle of the bar, the material will be subjected to strains, and if the load is great enough the strains will go beyond the endurance of the material and the piece will break or its original shape will be changed.

It is also well known that all material will deflect more or less when supporting a load in this or similar ways; and, further, that the amount a given piece will deflect depends entirely upon the magnitude of the load or its momentum, and that, therefore, the greater the load the greater is the deflection. It is equally as well known, but generally lost sight of, especially in spring construction, that the strain in the material increases directly as the load, and, consequently, as the deflection. Therefore, the strain in the material is twice as great if deflected two inches as it is if deflected one inch only, and three times as great if deflected three inches; from which may be seen that if there is no limit to the deflection the material will be overstrained, from which it naturally follows that, while springs are made use of for the purpose of obtaining deflection and to gradually check and bring to rest a suddenly applied force, it is evident that the deflection must be limited within certain boundaries.

The extent to which a given spring may be deflected (the permissible deflection) depends upon several things, among which may be mentioned:

First.—The nature of the material.

Second.—The length and proportionate arch.

Third.—The width and thickness of the plates.

Of these the first mentioned is perhaps the most important, for without proper material the most careful calucuations will not produce the desired results. The importance of the other two items is found by calculations based on formula and experience.

These formulas show that the deflection is governed entirely by the length and thickness of the plates, and that the relative proportions between these two dimensions cannot be changed without a change in the deflection.

A plate of a fixed length and thickness, or a spring of fixed length and thickness, no matter how wide the plate may be or how many plates the spring may be composed of, has a well-defined (permissible) deflection, which cannot be exceeded without straining the material.

The relations between the deflection, thickness and length of plates must, therefore, be maintained within figures corresponding to the strength of the material, in order that the best results may be obtained. These relations are often overlooked in the construction of springs.

Springs are used on account of their ability to absorb through sudden deflection increases of loads and to regain their original shape when the excess load has been removed, thus avoiding violent shocks. The greater the distance through which a spring can deflect the longer is the time in which the load is fully applied, and consequently the less severe is the shock. The more sensitive they are to any variation in the load the easier the vehicle will ride. The nearer the spring is loaded to the elastic limit of the material, the slower, longer, easier and more uniform are the vibrations.

This statement may not be understood, but may be verified in a simple manner by placing a piece of wood or other material on

*Paper read before the Society of Automobile Engineers at Buffalo, July 30-31, 1907.

two supports and load it in the middle with a suitable weight. If the relation of the weight to the material and section of the piece is such that the stress in the material will be comparatively low, the action of the piece, if set in motion, will be in the nature of a number of small, very quick vibrations, as shown in Fig. 1.

FIG. 1.—Showing quick vibratory action under light load.

The full line is intended to represent the position at rest, and the dotted lines the number and magnitude of the vibrations. If the load is increased so as to approach nearer to the elastic limit the vibrations will be as shown in Fig. 2—a few long, slow movements.

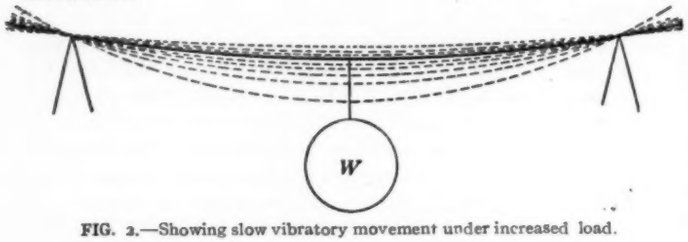


FIG. 2.—Showing slow vibratory movement under increased load.

There can hardly be any question as to which one of the two methods should be followed in order to produce smooth riding.

When deciding, however, as to how near the stress under the static load may approach the elastic limit, it must be borne in mind that if it is too near the limit very little additional deflection can be obtained before the elastic limit is reached and the usefulness of the spring is destroyed.

Practical tests have demonstrated, however, that a strain under a static load of 60 per cent. of the ultimate resistance of the material is permissible and will leave sufficient margin, in the majority of the cases, for the absorption of ordinary shocks.

We have tried to discover the reason why springs did break, and, looking into the matter in various ways, we came to the conclusion that there were, as it may be called, no safety-valves placed upon the springs—that is, at least upon the semi-elliptical springs. The full-elliptical springs have a safety-valve, and if properly designed the springs cannot be overstrained for when the centers meet the strain is at its limit; but with the semi-elliptical springs the situation is different—there is nothing to prevent the springs being deflected beyond their elastic limit.

The method of calculating springs has been laid down by Reulcaux in his formulæ, and if they are properly understood there is no reason at all why manufacturers should not make proper springs. But the formulæ are not understood, and as a last resort manufacturers generally specify the weights that the springs are to carry and leave the rest to the manufacturers, and allow them to design any spring that is suitable to carry the static load and which they think they can guarantee. Many manufacturers do not look into the conditions under which the springs have to work; they look on the load and the material, not on the deflection at all, and springs are placed in service in positions where they are not suitable.

It is quite easy to take all these things into consideration, and this paper was written for that purpose—to point out what should be considered in calculations of springs, and the main point, aside from proper material, is to pay due regard to the deflection. The breakage of a spring is due to an excess of deflection; that is to say, if the road is rough, and with fast speeds, the result is that either springs take a permanent set or the plates will break. The deflection is determined entirely by the length of the springs and the thickness of the material. Any spring that is properly designed should last until the material has become fatigued through constant use.

The question as to what should be a proper deflection for springs has been argued in many ways, but I think it will be agreed that the greater the deflection can be made the better the vehicle will ride, and after it has been determined what the deflection should be, the remaining requirements may be readily calculated.

The riding of the vehicle depends largely upon how high the strain in the material is allowed to be under the static load. The nearer the strain comes to the elastic limit the easier the springs will act; the farther away from the elastic limit, the rougher will be the riding.

The best spring-makers, using the very best steel, cannot make a satisfactory spring unless the deflection is limited within the bounds of the elastic limit of the material. Next to the steel, or perhaps more than the steel, the construction of the spring is, in most cases, of the most importance. Also of prime importance are a properly standardized uniform heat treatment, special composition, high tensile strength steel, and intelligent design, associated with modern refined heat treatment. These are necessary to produce springs such as are required by automobile manufacturers, who desire to maintain a good reputation.

I fear, gentlemen, that I have imposed upon you too long. I have endeavored to be brief, and have confined myself to one phase of spring manufacture, and I trust a phase which will be of some interest to you. Also, I would disclaim full credit for this paper, because, owing to illness and absence from home, I have been unable to give the matter proper attention, so have been compelled to use some extracts from papers of others, my chief authority being C. A. Lindstrum, M.E.

FAILING DUSTLESS ROADS, MAKE DUSTLESS CARS

Automobilists—and with them we are to a certain extent in agreement—urge that the roads should be constructed to suit the modern traffic conditions, says *The Engineer*. But we go further, and add that if manufacturers can produce cars which raise very little dust, then every encouragement should be offered for them to do so. From information which we have gleaned from a reliable source, we gather that the amount of dust raised was proportional to the speed up to forty miles per hour, at which the cars ran—and yet motorists urge the abolition of the speed limit! It cannot be said that the speed limit has been of any real use at all, but unless cars can be made to raise less dust—for it is obviously impracticable to reconstruct all the roads in the course of the next two or three years, even if the money were forthcoming to do it—there can be no hope of an abolition of this limit. For the good of the general public, those designs which are known to be prolific dust-raisers should not be allowed on the roads. We do not in any way wish to handicap so new and important an industry, but it must not be forgotten that it is in the best interests of motoring itself that the dust nuisance should be abated.

METHOD OF LIQUEFYING RUBBER.

To dissolve india-rubber, says *Work*, take one part of the raw or unvulcanized material, and cut it into thin shreds with a sharp knife wetted with water; dry the rubber, place it in a wide-mouth bottle, and cover with benzene; shake the bottle occasionally, and add more benzene from time to time, as the rubber swells, until a thick fluid product is obtained. The rubber used must be of the raw kind, not that which has been made up for sale; the latter has been vulcanized by heating with sulphur, and is quite insoluble in benzene. Moreover, there is very little rubber in ink and pencil erasers, as they are composed very largely of mineral matter. It is also important that the right solvent is obtained; benzene is the coal-tar naphtha or benzol. Petroleum ether or spirit, also known as benzine and benzoline, will not dissolve india-rubber. On evaporation of the solution of india-rubber in benzol, the latter passes off in the state of vapor, leaving the india-rubber quite unaltered.

DOES ALCOHOL ATTACK METALLIC SURFACES?*

By G. LESSARD.

NOW that it seems certain that alcohol is destined to ultimately form the world's motor fuel, it is apropos to consider whether this carburent is afflicted with an inherent vice that would render its use prohibitive for this purpose. It has been asserted that the most grave objection to the employment of alcohol as a fuel is its oxidizing action on metals, and it is said that tanks, cylinders, valves, piston-rings and mufflers are all damaged by the use of alcohol. We will examine these accusations at length, with a view to determining if they be justified, as well as the remedies to be adopted to counteract this noxious action attributed to the use of alcohol.

Chemical researches have long since demonstrated beyond the shadow of a doubt, that *pure* ethyl alcohol has no deleterious effects on any of the metals used in the automobile industry, with the exception of one, that of aluminum, to which alcohol gives up its oxygen, to form alumina, consisting of two parts of aluminum and three of oxygen, and which is the oxide of the metal. Consequently, it will suffice to avoid the use of aluminum for carbureters or elsewhere in contact with the fuel to eliminate all possibility of oxidation by alcohol, provided the exposed surfaces of the motor never come in contact with anything but pure ethyl alcohol. But, unfortunately, these surfaces are in contact with the air; with water; with the denaturants called for by the excise regulations; with those carburents that are frequently added to the alcohol, and with the products of combustion.

While gasoline is to a certain extent a lubricant that insures the metal against the oxidizing action of the air or water, alcohol is a solvent, and in lieu of preserving the metal against oxidation, it renders it subject to the action of whatever oxidizing influences it may happen to come in contact with. Experience shows, however, that metals suffer little from the action of the oxygen in the air or water, and it is easy to preserve surfaces that have been cleansed by alcohol from a prolonged contact with either, simply by the use of small amounts of lubricating oil from time to time.

But these do not constitute all the difficulties by any means, and the greatest of these is the fact that the alcohol is never employed pure, but denatured. In addition to ethyl alcohol, the fuel mixture called for by the government regulations contains a composition to the extent of 10 per cent. of the whole, consisting of the following:

Methyl alcohol, hydrated	.725
Acetone	.25
Pyrogenic impurities	.025
Benzene (government specification)	0.5001

At ordinary temperatures methyl alcohol and acetone have no effect on the series of copper aloys, such as copper, lead, etc., nor on those of iron, such as iron, nickel, zinc, chromium. But the pyrogenic impurities will certainly have some action due to the presence of pyroligneous acid. Fortunately, this acid only exists in extremely small quantities and it is rendered inoffensive by its combination with alcohol, in the form of ether. As it is impossisble to be certain that the etherification is complete, the few thousandths of pyroligneous acid not absorbed are always to be feared, and should lead to a demand for a diminution of the proportion of the denaturant.

The carburents which are generally mixed with the alcohol, may also have a deleterious effect on the metals proportionate to the amount of impurities they contain. Of all these carbureting substances, up to the present, the greatest success has been attained with benzene. It does not attack metals, but it may contain sulphur or sulphuric products due to its origin (*i. e.*, from coal tar), and it is well known that this sulphur is a powerful solvent, which contributes to prepare the metallic surfaces to enter into combinations with other attacking substances. Under the influence of heat it will sulphuret zinc, copper, and also iron, but, fortunately, it is easily possible for the refiners to supply benzine that shall not be contaminated by more than infinitesimal quantities of this deleterious substance.

It frequently happens that in the extraction of the light oils contained in coal tar from which benzene is produced the sulphuric action combines with the carburets of the aromatic series, giving sulphurous products, and in particular, sulphurous benzene acid. This acid attacks metals even when cold. But generally the presence of these sulphurous products need not be considered as an obstacle to the use of alcohol, though it may be well to indicate the influence that these impurities may have in order to direct the attention of the distillers to this point.

We may now take up the effect which the products of combustion of the alcohol may have on the metal surfaces of the motor. Theoretically, alcohol in burning produces carbonic acid and vapor of water as follows:

$$C^2H^5OH + 6O = 2CO^2 + 3H^2O$$

Ethyl alcohol — Oxygen — Carbonic acid — Water vapor

It may be well to remark that this combination does not become complete unless the conditions of the reaction are fulfilled; that is, unless the alcohol vapor is intimately mixed with seven times its own weight of air and the temperature is in the neighborhood of 1,500 Centigrade. Practically, these conditions are never exactly fulfilled, and in adding to that consideration the fact that alcohol denatured according to the government specifications contains large quantities of impurities, as we have already indicated, it is not to be marveled at that the secondary reactions, which in addition to the principal reaction, give birth to a number of products, of which we only enumerate those which may prove a menace to the cylinders and valves, such as acetic acid, formaldehyde, trioxymethylene, and, with certain carbureted alcohols, sulphuric acid. This last acid is derived from the combustion of the sulphur contained in the sulphurous benzene acid, found in the benzines extracted from northern oils. With a certain amount of care in the distillation of the coal-tar, it is possible to achieve the almost total elimination of sulphurous products. The formaldehyde, due to the denaturant, does not appear below 450 degrees C., and at about 300 degrees the proportion is minute.

The presence of *trioxymethylene* has been observed in the exhaust gases at a dull red heat—600 to 700 degrees C., and in very small quantities; this substance is formed by contact with the hot walls of the exhaust ports. But the most dangerous product is the acetic acid, which attains to a proportion of 14 to 15 per cent. of the alcohol while combustion is incomplete; that is, a temperature around 400 degrees C. At 600 degrees C. not more than a trace of acetic acid is found. On the whole, the dangerous products are not formed except at a relatively low temperature, so that it is only while getting the motor under way that they are to be feared, that is, during a very short time. And it may well be asked, if the rapid contact of these extremely diluted vapors of acetic acid and other ethers and aldehydes really constitute a serious danger to the alcohol motor. Up to the present experience has demonstrated that the danger is hardly of sufficient moment to be seriously considered.

As a result of the extended and minute laboratory investigations of MM. Sorel, G. Chaveaux and Boulanger, it may certainly be said that the accusations against carburetted alcohol are not well founded. We may also call attention to the results of the test published by Cormier, in which a motor was dismantled after having been run 1,200 kilometers on carburetted alcohol without the slightest traces of deterioration being revealed.

*Translation from "La Vie Automobile," Paris, by Charles B. Hayward.

A CHAPTER ON MAGNETO IGNITION*

By ELMER G. WILLYOUNG.

THERE are two fundamental methods of electric ignition, viz., the "make and break" or low-tension, and the "jump spark," or high-tension, system, and each of these systems may be actuated by either dry cells, accumulators, or mechanical generators. As used in the text, "mechanical generator" means a miniature dynamo driven in any convenient manner from the motor and delivering direct current; it supplies its own exciting current for the field magnets, has its own commutator, and is in every way a reduced copy of an orthodox dynamo.

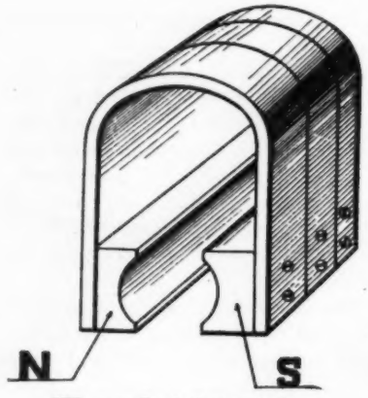


FIG. 24.—Typical magneto form.

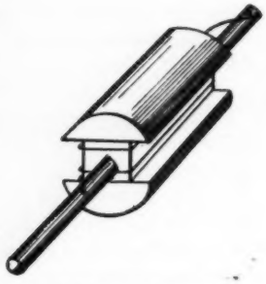


FIG. 25.—Armature.

In a self-excited dynamo, part or all of the current generated is passed around the soft iron field, and hence this current must be constant in direction and uniform in value in order that it may give to the field the constant magnetic properties necessary to the continuous generation of current in the armature. Its disadvantages are: (1) That it requires high speed (1,800 to 2,500 r. p. m.) to develop sufficient actuating current, thus making it necessary to start the motor on a battery; (2) uniform speed, especially with the jump spark system, because here the vibrator is exceedingly sensitive to changes in current, and, in fact, only works satisfactorily and without excessive burning of the contact points when the current is maintained within certain and quite narrow limiting values; burning of the dynamo commutator is also a result of varying speeds. A governor must therefore be provided and so set that a certain normal speed (obtained with a normal rate of motor speed) will never be exceeded, and this is, necessarily, a delicate added complication. So that mechanical generators have not been satisfactory.

This brings us, logically, to the magneto system, which is essentially nothing more than a substitute for the dynamo just described; a special form whose field, instead of being soft iron temporarily excited by the operation of the machine itself, is of steel magnetized permanently. In Fig. 24 we have a typical form of magneto and in Fig. 25 the corresponding armature; Fig. 26 shows (dotted lines) the direction and distribution of the magnetic force before the armature is in place; while in Figs. 27, 28, 29, and 30 the armature is inserted and we see the changes in magnetic distribution corresponding to its angular advance. The magnet is of steel specially treated and very hard, and the armature of very soft iron of "dumb-bell" section; about the neck of the bell is wound a suitable number of turns of insulated copper wire.

The conventional method of representing magnetic forces is by lines, the direction of these lines showing the direction of the force, and the number or density of the lines to a given area, the intensity of the force. Each line will always make up a closed curve such that if a short magnetic needle be freely suspended so as to touch the curve at any point, it will always be tangent to it. These lines of force will always pass more easily through a magnetic material than through a non-magnetic material (or air), even though this involves an actually longer path. Thus in Fig. 26 we see the lines passing almost uniformly from pole to pole, but as soon as the armature is in place, as in Fig. 27, the lines immediately "bunch up" and pass across through the dumb-bell, although having to go further to accomplish it. In Fig. 28 the armature has advanced about one-eighth turn, and we see the lines still within it, though badly twisted; another one-eighth turn and the lines have divided and no longer interlace the armature wires, but pass straight through the heads of the bell; last, Fig. 30, we have the lines again passing through the neck, but in the reverse direction to before.

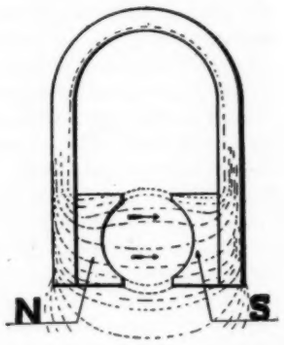


FIG. 26.—Direction and distribution of magnetic force before armature is inserted.

Now it is a fundamental electrical fact that whenever a magnetic line and an electrical conductor "cut across" one another, from whatever cause, and "electro motive force" (E. M. F.) is generated in the conductor and the intensity of this E. M. F. will be directly proportional to the number of lines cut across in a unit of time, and if the conductor ends be joined by a connecting circuit of any kind, there will be, in such circuit, a correspondingly greater or less current. Starting with Fig. 27 we get no cutting and no E. M. F. for nearly 90 degrees, when, suddenly, all the lines are "snapped" out and, note particularly, "snapped" in again in the reverse direction; *i.e.*, between Fig. 28 and Fig. 30 we have cut the same lines twice, which is equivalent to cutting twice the number of lines once. As this action takes place there is a very sudden rise of voltage in the armature conductor and an equally sudden falling away of the same (actually in the best magnetos the entire effect begins and ends within about 10 degrees of rotation angle). As the armature continues to revolve, we once more have quiescence until "A" is nearly at the bottom, when again we have the same strong impulse of E. M. F., but in the reverse direction with reference to the conductor (and therefore the terminals), which is now turned end for end. There are thus two "peaks" of voltage (and current)

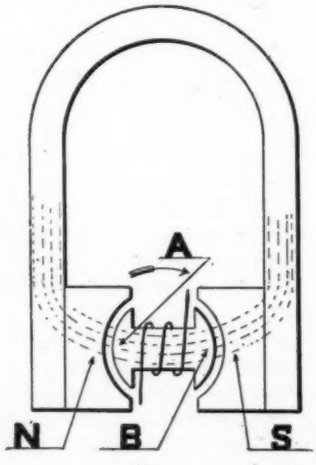


FIG. 27.

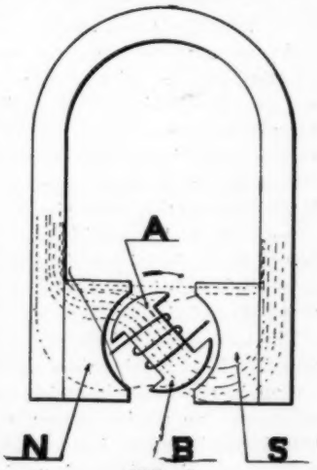


FIG. 28.

Showing changes in magnetic distribution corresponding to angular advance of armature. Lines "snapped" out and "snapped" in again in reverse direction

*Extract from Copyrighted Lecture No. 4, Correspondence School of Motor Car Practice, organized by the Maxwell-Briscoe Motor Company, Tarrytown, N. Y.

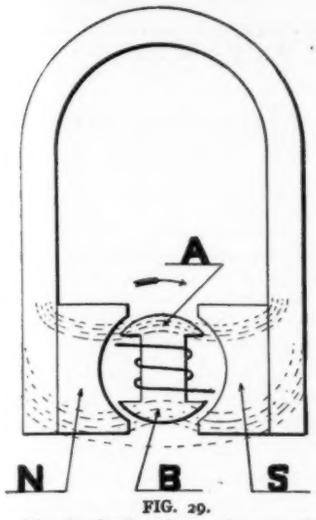


FIG. 29.

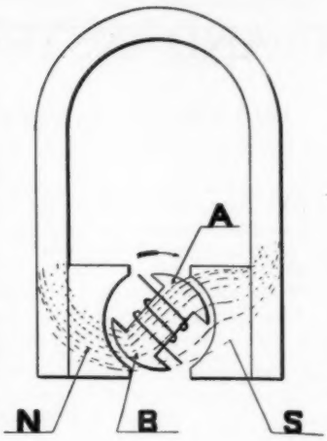


FIG. 30.

Showing further changes in magnetic distribution owing to continued angular advance of the armature.

to each revolution of the armature; this is shown in Fig. 31, the curve above the zero line being +, and that below the line —.

In practice, since we can only produce powerful currents at these two definite positions of the armature, it is necessary to gear the magneto positively (not belt it) to some part of the power plant, generally to the half-time shaft, so that the same angular position of the armature will always correspond to the same definite position of the piston in its cylinders; the ratio of the gear will, of course, depend upon the number of cylinders to be fired—thus, for a two-cylinder car, the armature would revolve at half the motor speed; for a four-cylinder car at the motor speed; for a six-cylinder car at one and one-half times the motor speed, etc.

In the low tension magneto there is but one coil of wire wound on the armature; the contact points within the cylinder are sharply separated at the proper time, exactly as in the battery "make and break" system, and the armature, which is at its critical angle, sends its surge of current across the gap. With the high tension magneto several distinct types are in use; each type has its friends, each does good work, and, as among the types, when judged by their best exponents, there seems but little choice. One type is represented by the Eisemann, in which the single-wound armature supplies current to the primary of a non-trembler outside induction coil, thus being essentially, after all, a low tension magneto operating a "jump spark" coil, but securing the discharge spark by a positive mechanism attached to the magneto, instead of by a vibrator. The matter of getting the maximum current impulse in this particular magneto is unique in that the discharge is the result of a "make" instead of a "break," as usual; the armature winding is normally short-circuited, thus giving it a very low resistance, so that the E. M. F. develops a very large current. Just as the spark is needed in the cylinder the mechanism suddenly opens the short-circuit, thus sending a rush into the primary of the coil and inducing a current in the secondary with consequent production of the desired spark.

Another, and this is the most widely used type, is that in which there are two winidings on the armature, one of few turns of rather heavy wire and the other of many turns of fine wire; these windings correspond to the primary and secondary in the ordinary induction coil. When the armature rotates, the primary generates current which, broken at the right time, induces a high E. M. F. discharge in the secondary. The Lacoste and Gianoli magnetos are both of this type, as is also the Bosch; in the last named, however, the armature remains fixed and a rotating sleeve of soft iron having oppositely disposed 90-degree segments cut away, and lying between armature and pole pieces, is used to carry around the lines of force and cause them to cut the conductors.

The usual method of making the discharge spark is, essentially, to have a fixed point attached to the armature shaft strike another point located externally; thus a cam lifting a contact lever is a common device. To time the spark, therefore, it need merely be arranged so that the outside point or arm may be rotated one way or the other according as it is desired to advance or retard the spark; as, however, but little angular rotation would be required to get outside the limit maximum current it is more usual to accompany this movement of the outside contact by an adjustment which will correspondingly alter the angle of the maximum current. This is done, in the Eisemann, Lacoste, and Splitdorf by having the driving shaft and the armature shaft separate, but joined by a pin attached to one shaft moving in a spiral groove attached to the other; the armature can thus be bodily rotated with reference to the driving shaft, while running at full speed. In the Gianoli and Remy magneto the maximum is shifted by having a movable soft iron sheathing cylinder (opposite 90-degree segments cut away) between armature and pole pieces; shifting this sheath angularly amounts to rotating the poles.

The magneto is a positive mechanical device, simple in its essentials, and hence capable of being strongly and durably built; it cannot depreciate any more rapidly than other well-made mechanism. It furnishes current only when it is wanted (when the motor is running), and derives its energy from the motor itself, though taking an insignificant amount of power.

Since the E. M. F. increases directly with the speed it may be asked whether, at high speeds, there may not be risk of "burn out" of the armature? The reply is that the current, being alternating, cannot rise as fast as the E. M. F. on account of the *impedance* of the circuit, and further, that in any case, the higher the speed the more E. M. F. and current is needed, since the more highly compressed gas requires greater E. M. F. to penetrate it. Impedance is the quality of a circuit by means of which it offers resistance to varying currents; it includes the usual conductive resistance together with other factors, such as rate of variation of the current, amount of magnetic material associated with circuits, etc., etc. In practice "burn outs" are very rare.

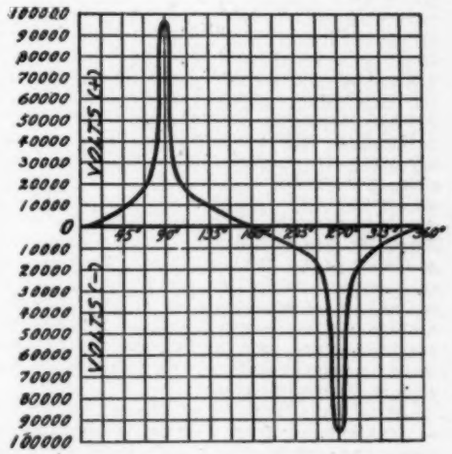


FIG. 31—Showing peaks of voltage (and current) at each revolution of the armature.

A great defect in the magneto is its low E. M. F. on low speeds, thus making it difficult to start up. It is quite common, therefore, to employ a coil vibrator outfit for starting, and then to throw over a switch so as to "cut in" the magneto. Some magnetos are much better than others in this respect, but the objection obtains to a greater or less extent with all of them. All in all, however, there is no question but that, in the present state of the art, the magneto is the coming standard mode of ignition. It is simple, it is positive, it wastes nothing, it is always ready, and last, but not least, it is efficient. The suddenness and intensity of explosion in the cylinder, and therefore the power, seem to be dependent upon the "hotness" of the spark; with a trembler coil and battery we cannot possibly, except with a much larger coil than is now commonly used, get a spark even approaching that of the magneto in size and temperature. We cannot use a large current because the vibrating mechanism of the coil will only give even reasonable satisfaction when it is run very lightly and delicately.

LETTERS INTERESTING AND INSTRUCTIVE

IN DEFENSE OF MR. FAY ON ALUMINUM.

Editor THE AUTOMOBILE:

[870.]—The title of Mr. Edgecombe's communication, No. 859, is a misnomer, if anything, on the ground that the promised "More light on the subject of aluminum" did not illuminate.

I submit that a one candle-power wax taper lost in infinite darkness would cast a far less sallow flicker than all Mr. Edgecombe has had to say. To begin with, he is wide off the mark when he quotes Mr. Fay, because he failed utterly to grasp the situation as set down by Mr. Fay about aluminum.

I read Mr. Fay's communication about aluminum and fail to find anything therein in any way unfair to the aluminum situation. Mr. Fay gave tests of various mixtures of aluminum as found in castings furnished by various foundries at diverse times, and the results given are worth far more to engineers and automobile builders than any amount of soft talk.

The weakest link in any chain is as the strongest, and it makes no difference at all, if on occasions some castings prove to be of quite high values, for the very reason that all castings cannot be relied upon to hold the higher strength, possible under certain conditions. Moreover, the automobile builder who has had no trouble with aluminum has not as yet completed his first model.

What Mr. Fay advises is along good engineering lines, i.e., take into account the inherent weakness of aluminum and by so doing realize all its advantages without having to suffer the consequences of considering the maximum possible strength; in other words, design on a basis of the aluminum probable strength, just as all engineers do when steel, cast iron, or wood, for illustration, are the materials of construction.

Mr. Edgecombe did not quote Mr. Elwood Haines correctly, because he failed to observe that Mr. Haines pointed out the brittleness of aluminum-zinc alloys. Moreover, Mr. Edgecombe's strictures on Mr. Birdsall's observations lack edge, since he says "it is dangerous to give chemical composition" on the ground that they would not be mixed right. Does Mr. Edgecombe wish to infer that he has a monopoly of brains? Anyway, when the danger of mixing is so great, why not tell not only the composition, but the mode of mixing also?

Mr. Edgecombe says in substance, "put blind faith in the Pittsburgh Reduction Co." What principle of business does he call into play that demands a blind investment? This is the method usual to the purchasers of "gold bricks." Does Mr. Edgecombe wish to infer that aluminum is a gold brick proposition?

Mr. Edgecombe says, "I enjoyed Mr. Blough's article * * * " Why? Was it a joke? Certainly Mr. Blough, out of his infinite fund of knowledge, allowed none of it to percolate.

Mr. Fay, unlike others who "essayed" to divulge information, "delivers the goods," and of all whom I have observed was the only true defender of aluminum, because he clearly pointed out its characteristics as well as its advantages, and by so doing rendered it possible to proceed to use aluminum along safe lines. True, Mr. Fay deplored the lack of strength in aluminum castings, but what of it? Who does not? Moreover, who would be so scant in keenness as to accept a mere puff by an engineer in the employ of makers of aluminum as against common knowledge, to say nothing of the definite unbiased information from a well known engineer whose painstaking work in the metallurgical field, especially as regards materials for automobiles, has been a conspicuous feature for several years?

Let us have light by all means, but it may be just as well to say the glimmer from a tallow tip can scarcely serve to drown the electric arc, although a "dip" might be the source of all the illumination that a great number of aluminum castings could stand and not go awry. JOSEPH SCHAEFFERS.

New York City.

The title which you find misleading was the work of the editor, and not that of Mr. Edgecombe, though, of course, it did not influence nor alter what followed.

FASTEST SPEED ATTAINED ON WATER.

Editor THE AUTOMOBILE:

[871.]—To settle a dispute, should be glad if you would state the fastest speed attained by any motor boat, American or foreign, over a long-distance course. J. A. THOMPSON.

Providence, R. I.

Panhard-Tellier, a French boat, established the world's record at the Monaco meet this year, when in the Championship of the Sea she covered 200 kilometers at an average speed of 35.01 miles an hour. *Dixie* holds the American record.

TWO AND FOUR-CYCLE DIFFERENCES AGAIN.

Editor THE AUTOMOBILE:

[872.]—Will you please explain through Letters Interesting and Instructive what is meant by "two-cycle" and "four-cycle" in connection with gasoline engines, as I frequently see these terms in print, and would like to have the difference between them explained. E. B. D.

Walcott, Ind.

Two-cycle, or, technically speaking, two-part cycle, which has been abbreviated by popular usage to the familiar term you mention, refers to an engine in which the two parts of the cycle known as the explosion and the exhaust take place on the down stroke, and the other two of suction and compression occur on the up stroke, so that the motor delivers a power impulse for every revolution of the crankshaft. Four-cycle, or four-part cycle, means that the four parts of the cycle take place independently, each necessitating a stroke of the piston for its completion. Thus down stroke, suction; up stroke, compression; down stroke, explosion; up stroke, exhaust and repeat; these constituting the four parts of the cycle. This matter has been explained at length very frequently in these columns, and you will find these, as well as detailed articles on the subject, in the back numbers of THE AUTOMOBILE.

SPRINGS AND CENTIMETER VALUE.

Editor THE AUTOMOBILE:

[873.]—Will you kindly inform me what is the generally accepted definition of a 100-pound spring; also, can you give me the value of one centimeter into inches in more decimal places than that given in hand-books, namely, 1 centimeter equals 0.3937 inches?

Toledo, Ohio. CHAS. H. WARING.

In general acceptance a 100-pound spring is one whose safe limit of stress is 100 pounds. All engineering handbooks give tables of the carrying capacity and deflection of various types of springs. To take one example at hazard, a ⅜-inch round steel helical spring of 3 inches outside diameter will carry with safety a load of 473 pounds, assuming that it is for intermittent working, as in a steam engine governor or safety valve. Every handbook gives one centimeter as equal to .3937 inches, and for ordinary calculations this is sufficiently exact. Worked out to its full number of decimal places, however, the value of one centimeter is .393707904 inch; this value is used in compiling all comparative tables.

MR. EDGECOMBE "SHEDS" MORE LIGHT.

Editor THE AUTOMOBILE:

[874.]—While I deplore the circumstances that impel me to crave further space to again take up the cudgel in defense of aluminum, I do so, offering but one excuse, i. e., "the enemy presses." If Mr. Edgecombe had succeeded in shedding light all would have been well, but my fear is the "cable tow" he used lacked strength, parted, and the light escaped, perhaps, to the place from whence it came. At all events, I am grieved to think Mr. Edgecombe should so translate my English as to make it a strange tongue to me, and I am bound to say he is cranking a grindstone to the tune of somebody else's axe.

The sense of my aluminum articles may be stated in few words, i. e., the uncertainties of the foundry are such that aluminum castings must be regarded from the point of view of the minimum strength of castings procurable and likely to be realized in the regular course of business. I have repeatedly stated that the desired qualities of aluminum, such as lightness, ability to assume intricate shapes, etc., is a large recompense, but it is a great mistake to make designs on a basis of the high figures of "Lake" or the loud talk of "boomers."

In honestly setting down the facts, I consider I am the defender of aluminum, whereas its greatest enemies are those who talk maximum possible values only, thus leaving it to purchasers of

automobiles to discover at their expense and inconvenience that the real use of aluminum dominates the situation.

Mr. Edgecombe says (of one of my tests) "they are quite correct for an alloy such as he cites, but the chemical analysis tells the story, it is an art alloy, a brittle, crystalline, gray-white metal, which would run very liquid and be fine for casting tin soldiers." Of this statement it may be looked upon in two ways, viz.:

(a) Mr. Edgecombe fell off of his high chair after inspecting one test only, thus missing all others.

(b) The foundry that made the motorcase castings, from which I took the casting specimen, considered it an advantage to use an alloy that would run liquid and be fine for castings.

This phase of the situation does not interest either myself or automobile builders, since the tests were made from castings that "failed in service" and were aluminum castings from representative sources.

Mr. Edgecombe says: "Don't let the foundryman get scared because he thinks this metal—ingots from the Pittsburg Reduction Company—is too cold to run." The only scare I know of that can be pumped into a foundryman is the reduction company's price scare; it is quite as stable as the aluminum.

I desire to join Mr. Edgecombe in his enjoyment of Mr. Blough's article—it was a good joke—but this does not debar me from observing that Mr. Birdsall had an apt way of "serving out his 'petulance,'" and I doubt that some folks would care for the other six courses.

I cannot take time to mention the fallacies in all of Mr. Edgecombe's three-legged arguments, but I do hope he will come to the defense of aluminum and not try to get poor automobile devils into trouble by inducing them to accept values for the strength of aluminum "not obtainable in practice."

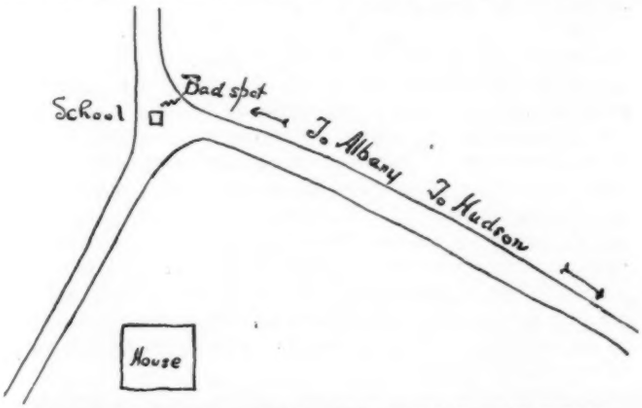
THOS. J. FAY.

New York City.

VIEWS OF A SENSIBLE AUTOIST ON SPEEDING.

Editor THE AUTOMOBILE:

[875.]—As a rule I never like to appear in print, but I see and hear so many things that might be of some interest to the automobile world. For many years I have been coming up here to pass my vacation, as the country is so beautiful and the air refreshing. Also the roads are fine and level, which is what the man with an



DRAWING SHOWING DANGEROUS SPOT IN ROAD NEAR SCHOOL.

auto is looking for. Now my purpose in writing these few lines is to try and caution my friends against driving too fast. I am staying at a house that is surrounded by roads, and I believe that from 75 to 100 autos pass during the day, and if some of them could realize the speed they were going, and the risk, they would be surprised. I have been expecting for the past two weeks to see an accident hourly, and it finally happened on Sunday evening at 5:30 p. m., resulting, perhaps, in the death of two people.

Now, what is the reason for fast driving? I have seen them going at 45 miles per hour most every day, and in this case there is a slight rise in the road about a quarter of a mile from the schoolhouse, and when the autos strike it they seem to bound up in the air and then down. And what is the consequence? Broken springs, or axles, and many other troubles. We people that are of a prudent nature are almost afraid to venture on that one road. In the above accident I found rear left wheel broken, tire burst, front axle broken at knuckle and sagged in center (axle made of bronze). I also ascertained from a thorough examination of the automobile that after its terrible plunge at right angles to the road it was in good condition, and the engine kept running for several minutes.

As there were many sitting around at the house, we rushed to the automobile and righted same, as a minute lost would have meant instant death. We telephoned for doctors immediately, who arrived in fifteen minutes, had special car provided, and they were taken to Albany to a hospital. I may add that those on the right-hand side of the car did not have a scratch.

As an automobilist and engineer, I take great pleasure in the sport, which is a grand pastime and health restorer. I am one of your old subscribers. HENRY NICOLL HAMILTON.

Kinderhook, Columbia Co., N. Y.

AMERICAN CARS WITH WATER-COOLED BRAKES.

Editor THE AUTOMOBILE:

[876.]—In the Aug[illegible] 8th issue, No. 848 writes for information as to the method of fitting water-cooled brakes, and in your reply to his communication you state that "so far as known, no American cars have been built with water-cooled brakes, although there are several localities in this country that would seem to require them."

We have tried to give as wide publicity as possible to the fact that there is one American-built car which is fitted with water-cooled brakes, and that is the Lozier. Every car which we have turned out this year is fitted with brakes of this kind. The water is carried in a three-gallon tank suspended from the chassis. The brake drums are hollowed to carry water, the water being automatically fed to the drums of the brakes by means of air pressure. When the brake pedal is operated, an air valve is automatically opened and the circulation of water started. When the pressure on the brake pedal is released, the flow of water ceases. In level country, where water-cooling is not necessary, the system can be disconnected by closing an air valve. With this system it is possible to keep the brakes on constantly on a very steep grade for thirty minutes without any danger of overheating or burning.

LOZIER MOTOR COMPANY,

New York City. C. A. Emise.

Editor THE AUTOMOBILE:

[877.]—In your issue of August 8th I read an inquiry regarding water-cooled brakes on American cars. You state that so far as you know, no American cars have ever been built with water-cooled brakes.

For your and the reader's information I would like to state that the Matheson cars built in 1904, 1905 and 1906 were all equipped with water-cooled brakes located at the sprocket shafts each side of the transmission case, and were of the hollow drum type, water being supplied from copper pipes from a separate tank located under the front seat. In some cases short pipes were used with a funnel, located under the footboard in the tonneau, into which water could be poured very readily, filling the big drums, which held about half a gallon of water each. This was found to be sufficient to descend the steepest hill without completely evaporating the water. Our experience has been that the ordinary automobile user will not take the time to fill this auxiliary water tank, nor fill the tank through the funnel, and we have therefore discarded this system in our 1907 car by compensating for this omission by making the brake surface more liberal. Our present cars are equipped with two transmission brakes 10 inches in diameter 3-inch face; two rear hub brakes 15 inches in diameter by 2-inch face, all brakes and shoes being metal, the brake drums being steel and the shoes of Manganese bronze. With this size of brakes we find it possible to travel all over the mountains of Pennsylvania, known for their extreme gradient, without having brake troubles. In fact, some cars will run a whole season without requiring even an adjustment on the brakes. MATHESON MOTOR CAR COMPANY,

Wilkesbarre, Pa. Chas. R. Greuter.

A FLORIDIAN'S WANTS ARE CONCISELY STATED.

Editor THE AUTOMOBILE:

[878.]—I want an automobile—medium priced—one that will have a small repair bill—one that will take our sandy Florida roads—one that will track with our wagon roads, 61 inches—a light touring car for four persons—something that is easily handled and will give satisfaction—not over a $1,200 car. What would you advise me to buy and where to buy it?

Would you advise me to buy a second-hand car, if in good shape and could be bought at a big discount from regular price?

Arcade, Fla. J. L. JONES.

MECHANICAL MAN WANTED—NEW FACTORY.

Editor THE AUTOMOBILE:

[879.]—Do you know of a good automobile man who can take charge of the mechanical department of a new automobile factory which is just being started? We have an inquiry for such a man, one who can make good. If you can put me in communication with a reliable and capable man it may result in benefit to him, and I will appreciate the favor. W. H. MANSS (G.),

Chicago, Ill. Industrial Commissioner, C., B. & Q. R. R.

PRESIDENT ALEXANDER WINTON AND SALES MANAGER CHARLES B. SHANKS TALKING OVER THE WINTON'S GOOD POINTS.

"SIX-TEEN-SIX" is the title of the latest Winton product, and its uncovering is, moreover, an announcement that its sponsors, the Winton Motor Carriage Company, Cleveland, O., mark one of the most recent accessions to the ranks of the builders of six-cylinder cars. As a foreword in favor of their new production for 1908, the makers preface their introduction to its mechanical features with the following:

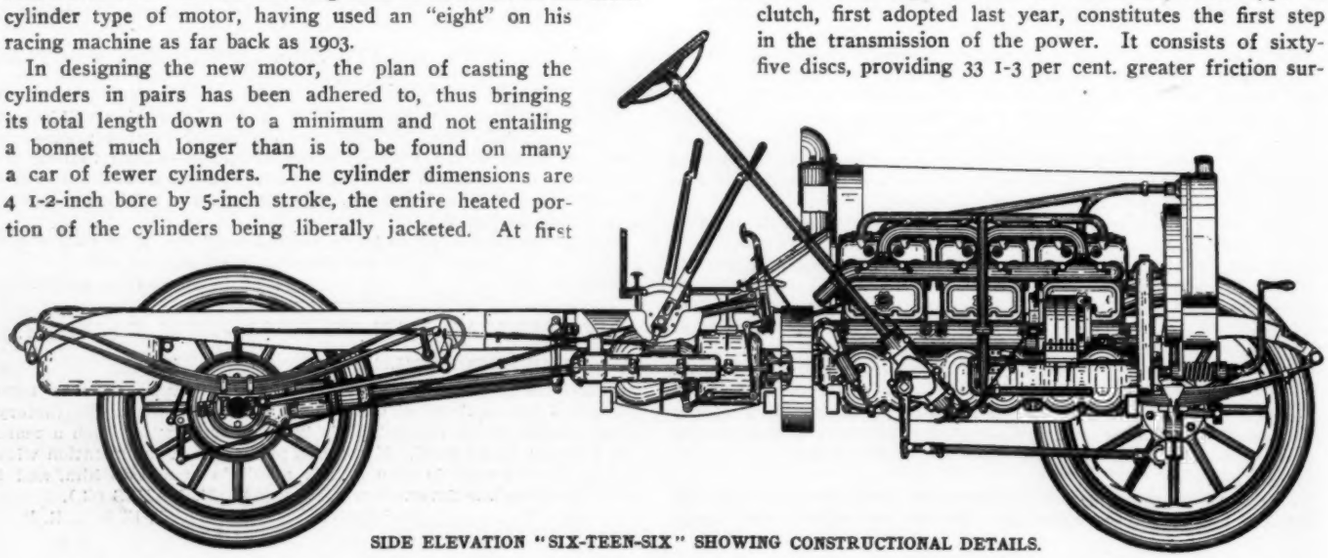
"The division of a horsepower into six equal parts as against four equal parts provides evidence that the smaller cylinders do the better work. The six-cylinder motor has six power strokes on each two revolutions of the crankshaft, whereas the four-cylinder motor has but four power strokes. Power strokes in the six-cylinder motor overlap each other, whereas in the four it is impossible to have a fresh power stroke until the power of the previous stroke has been completely negatived."

So much for the maker's introduction. As for the car itself it will be noticeable from its portrait, published herewith, that it is a fitting representative of the long line of Wintons that has preceded it into the past of discarded designs, and is well equipped in every respect to maintain the standard achieved by them. But while a car of this number of cylinders is a newcomer in the Winton household, its advent is hardly the result of its creator having just come round to the principle, as it will be recalled that Mr. Winton has long been an advocate of the multi-cylinder type of motor, having used an "eight" on his racing machine as far back as 1903.

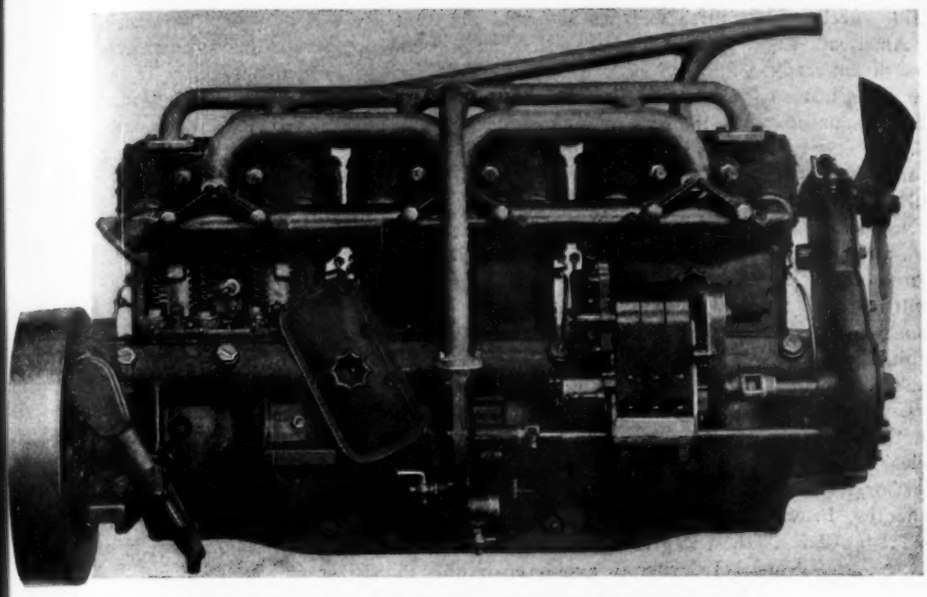
In designing the new motor, the plan of casting the cylinders in pairs has been adhered to, thus bringing its total length down to a minimum and not entailing a bonnet much longer than is to be found on many a car of fewer cylinders. The cylinder dimensions are 4 1-2-inch bore by 5-inch stroke, the entire heated portion of the cylinders being liberally jacketed. At first glance it will be seen that the new motor is distinguished by the adoption of a practice that has long been advocated by certain engineers, but which has, so far as known, been confined to one or two cars made on the other side up to the present. This is the provision of a protecting case, or pocket, for the valve rod, plungers and springs, which, while rendering them proof against the action of dirt and grit, does not make them any the less accessible than formerly owing to the liberal sized and easily detached sheet steel covers.

Both the cylinders and the camshaft are offset, this being a feature of the Winton Model M of last year, and the valves are all on one side of the motor. This method of placing the camshaft makes it readily removable as a single piece through the front end of the engine. The motor gears are all placed forward and are of hardened steel, alternating with brass or white fiber. The pinions, as well as all the other working parts, are thoroughly enclosed, this protection even being extended to the plugs over the valves. The aluminum crankcase is split into right and left-hand parts to facilitate access to and removal of the crankshaft or connecting rods and pistons without disturbing the cylinders or their connections, and all bearings are attached to the stationary side so as not to be disturbed by the making of other adjustments.

A refined and enlarged edition of the multiple-disc type of clutch, first adopted last year, constitutes the first step in the transmission of the power. It consists of sixty-five discs, providing 33 1-3 per cent. greater friction sur-



SIDE ELEVATION "SIX-TEEN-SIX" SHOWING CONSTRUCTIONAL DETAILS.



LEFT-HAND VIEW OF MOTOR, SHOWING VALVE SPRING COVERS, ETC.

face than that of its forerunner just mentioned. It is held together by six springs placed at equidistant points round the outer circumference of the clutch, thus distributing the tension to much better effect and also greatly reducing the possibilities of being stranded through the defection of this essential, as is the case where reliance is placed on a single spring.

The clutch is supported on ball bearings and runs in an oil bath, though it is readily accessible and any one of the springs may be easily removed or replaced. By the addition of simple and compact devices, the clutch can be locked in the disengaged position without interfering with the brakes.

That fashion dominates engineering practice is evident from the fact that the next step in the transmission consists of a three-speed gear set, which the makers are frank to state is fitted more to comply with the prevailing demand than because this number of speeds is required.

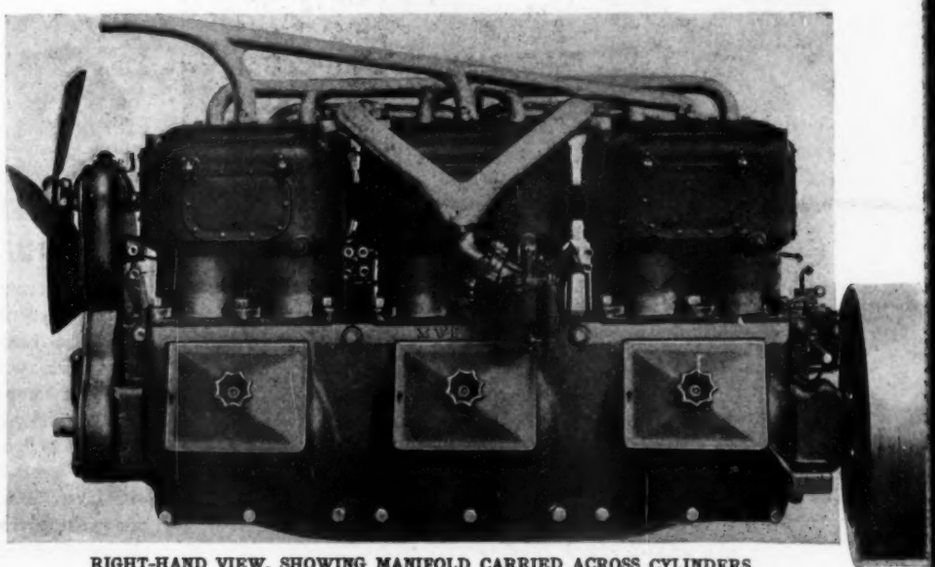
This gear-set is of the sliding type, works on the selective method of speed changing and gives the direct drive on the third speed. The shafts are mounted on ball bearings throughout, and the special interlocking mechanism is incorporated in the housing, thus protecting every operative part. Final drive is by means of a propeller shaft, and this has been so designed with relation to the remainder of the car as to lie in practically a horizontal plane under a wide range of varying conditions of load. To provide against relative movement, due to inequalities of the road, a flexible coupling is provided between the clutch and the gear-set, with two roller type universal couplings in the driving shaft.

The same attention to providing thorough protection for all working parts has also been extended to the drive. The torsion rods are equipped with ball joints and are of an improved type. The rear axle is of the floating type carrying no load, and the axle shafts, differential gears and pinion shaft are all removable without the use of a jack or pit, the car always being supported by the wheels. The rear axle unit is distinguished by the use of Timken roller bearings throughout.

To come back to the motor, there are also several new features of note to be found where its accessories are concerned. The new carbureter is provided with two nozzles and two throttles, both of which operate in conjunction with one another and progressively, the smaller of each opening first and later picking up the larger as the requirements of the motor increase. Special attention has been paid to the ignition, and while this is in duplicate the systems have been made very compact and simple. An Eisemann high-tension magneto constitutes the chief standby, while current for the second system, which is supplied by accumulators, is led through the distributor on the magneto and the single vibratorless coil of the latter before passing to the plugs. For lubrication a gear-driven Hancock oiler is provided, an independent oil pump forcing the oil from the crankcase to a filter and thence to the oiler, from which it again emerges through twelve separate leads taken to the various important points, so that the same oil is used constantly as long as it is of any value. Cooling is taken care of by a fin tubular radiator supplied by a gear-driven centrifugal pump and supplemented by a fan, also gear-driven and provided with a friction clutch.

Where the remainder of the car is concerned, it may be said to embody practically all those features that have distiniguished its predecessors of the Winton line. This is noticeable in the use of Winton twin springs, the Parsons manganese bronze front axle and other familiar essentials, though there are, of course, many detailed refinements, such as the use of aluminum for the bonnet, the sides of which open by means of spring plungers, the mahogany, steel-hooded dash carrying an auxiliary gasoline tank and the like, which go to show that no pains have been spared and not even the smallest detail has been passed unconsidered. Thirty-six-inch wheels have been adopted.

In discussing present-day tendencies in automobile manufacture and design, Mr. Winton says: "If I were not well convinced that the six-cylinder car is far superior to previous types, I certainly would not have begun the manufacture of six-cylinders exclusively, as our company is now doing. Six-cylinder advantages are so fully acknowledged by automobile engineers that it is impossible to raise an argument. Constant power, absence of vibration, great power in reserve, wonderful flexibility, less weight per horsepower—all that the motorist desires, he finds in the six. And in our own construction we show actual simplicity, all working parts housed and lubricated, combined with almost instantaneous access to all working parts. We have eliminated complication. We use a single coil in company with a magneto.



RIGHT-HAND VIEW, SHOWING MANIPOLD CARRIED ACROSS CYLINDERS.

the price of which alone is a guarantee of superior excellence. This new model of ours will serve to prove American supremacy. That has been my constant aim for years. I am ready now to let the public judge whether it be true or not, and instead of asking them to go to New York to see, I am having our new model brought to their home cities."

In regard to this latter feature of displaying the new models in the leading cities, two exhibition express cars will be used, one traveling east from Cleveland and one west. Each show car will carry two demonstrating models of the Winton, an enameled chassis, a fully equipped exhibition model, and a corps of demonstrators. Upon arrival at each city, the exhibit will be taken to the company's salesroom and there displayed from one to four days. The western itinerary is as follows: Toledo, Detroit, Cincinnati, Louisville, Indianapolis, St. Louis, Chicago, Milwaukee, St. Paul, Minneapolis, Omaha, Lincoln, Denver, Salt Lake City, Los Angeles, San Jose, San Francisco, Portland, Tacoma, Seattle, Vancouver and Winnipeg. The eastern itinerary includes: Pittsburg, Washington, Baltimore, Philadelphia, Newark, Newburg, N. Y., New York City, Brooklyn, Bridgeport, Boston, Taunton, Providence, Middletown, Conn., Hartford, Springfield, Troy, Albany, Syracuse, Rochester, Buffalo and Toronto.

Some Good Winton Money for Careful Drivers.

In connection with a plan formulated by the Winton Motor Carriage Company, which puts a premium on careful driving, there is a chauffeur somewhere in this country who will win $1,000 in gold for his strong use of common sense, and nine others will divide $1,500 in cash prizes, graded from $500 down to $100. In placing the Winton "Six-teen-Six" on the market, the output of which is limited to 500 cars for 1908, its makers are desirous of securing a complete and authentic record of the performances of each, and are offering $2,500 in gold as an incentive to the drivers to keep accurate tabulation of mileage and upkeep expenses. The chauffeur who proves the best record will receive $1,000, the second best record will win $500, the third $250, the fourth will get $150 and the next six will be given $100 each. "We offer these prizes as a premium on intelligence and carefulness," says Mr. Winton. "No automobile manufacturer in the world has anything like an accurate record of the work performed by the cars of his make, but we propose to secure such a record. This plan ought to be effective, because it provides ample payment for the man who keeps tab. That the records may be absolutely accurate in detail, each contestant will be required to have his report acknowledged by his employer and sworn to before a notary public. When the contest closes a committee, composed of automobile editors of leading daily papers will be asked to make the awards."

ALL READY FOR A RIDE IN THE "SIX-TEEN-SIX."

Mr. Winton emphasizes the point that this contest operates to the distinct advantage of the car owner, as follows:

Each competing chauffeur must drive for the same owner throughout the contest, hence the man who stands to win $1,000 is certain to give his employer the most faithful service and will hesitate before he jumps his job in midseason.

The report is based on average cost of repairs per mile, hence the chauffeur will endeavor to avoid repair bills and will do his best to give his employer maximum mileage at minimum expense.

In order to avoid repair bills the driver will exert himself to handle the car intelligently, to understand its care and repair so that he can keep it in constantly good running condition, and especially to avoid reckless driving, which, more than any other single item, helps to keep repair shops busy.

Under the Winton prize plan the chauffeur who runs up repair bills is virtually paying for them out of his own pocket, inasmuch as each such item of expense puts him farther away from the $1,000 first prize.

WHY A MOTOR LOSES POWER.

Keeping a car tuned up to its highest point of efficiency should naturally be the effort of every driver, and the following suggestions from J. D. Maxwell are well worth reading:

"I am continually surprised that the majority of cars show up as much power as they do. You meet occasionally men who take a pride in keeping their power up to where it ought to be, but by far the greater class seem to be thoroughly satisfied if the cars run at all.

"There are three great causes for loss of power in a gasoline motor. Probably the most serious offender is the lack of compression. The valves should be carefully ground in and care should be taken that there are no leaks either around the spark plugs or the valve caps.

"The electrical ignition is also usually carelessly taken care of, and it is a fact that the intensity of the electric spark is a most important factor if the motor is to develop its full power. A third and last cause is improper mixture of the gasoline and air; or, in other words, the carbureter should be properly adjusted.

"There are, of course, several factors that enter into each of the above three general causes, but you can take it as an axiom that when the compression, the electric system and the carbureter are all in proper condition the motor will show up its full power."

CHICAGO TO HAVE A PARTS SHOW.

It is announced that Chicago is to have two shows this winter after all. The National Auto Parts Show promoted by A. M. Andrews, which was held for the first time last year early in the fall, was to have been repeated at about the same time this year, but in response to a demand on the part of those dealers who participated in last year's event it has been decided to hold it concurrently with the National Show, which is set for the week of November 29 to December 6. There were 85 exhibitors at last year's show, and it is expected that the number will be increased this year. The show is to be held in Casino Garden, on Wabash avenue.

INCREASING EFFICIENCY BY USE OF SURPLUS HEAT

By A PACKARD FACTORY EXPERT.

THE gasoline motors of automobiles being heat engines, thermodynamical considerations, other than those of the general principle and method of power generation, are important in the development of such engines toward the goal of high efficiency. It is obvious, in theory, that any use which may be made of waste heat—after it has reached the point at which, in ordinary practice, it dissipates—will tend to increase, indirectly, the number of heat units that are developed by the engine. In practice this holds true so long as, in the utilization of waste heat, there is not added mechanical complication sufficient to overbalance by its own absorption of power the increased efficiency of the heat salvage device.

It might easily be possible to overload an engine with heat-recovering apparatus that would require more power for operation than it would repay in added efficiency. Also, it is possible to complicate to a point where frequent mechanical trouble would offset the advantage of increased efficiency. All these points were carefully studied by the Packard Company in the adoption of heat-saving elements in its motor. There were adopted two ways of utilizing surplus heat—without the addition of working mechanism that would complicate, require additional operating power or interfere with any of the other motor elements. Carburation and lubrication were the selected mediums of heat recovery.

There are several distinct advantages in the heating of a carbureter which independently tend toward greater efficiency of the engine itself in its ordinary method of power development. Probably the most important is that a heated mixture relieves the engine of part of the work of heating the incoming charge up to a temperature necessary to convert it, as a gas, to an ignitable and expansible power agent. This is a certain amount of work that must be done. If it can be done by an exterior and non-power-consuming agent, such as waste heat, the engine itself is saved just that same amount of work and gains just that much in efficiency.

That the apparent theoretical condition is true in practice is shown by comparative tests of cold and warm charges in an engine equipped with a carbureter that may be used either cold or warmed. It will be noticed that, when run cold, there is much more likelihood of and tendency to misfiring than when run warmed, demonstrating that the heated charge furnishes a more readily combustible fuel, and, hence, a more smoothly and efficiently running engine. The same point is proven also by the difficulty generally experienced in starting a motor with cold cylinders, as in winter.

The area of the opening in the aspirating nozzle may be larger in the heated than in the unheated carbureter. This is a factor in the previous advantage of providing a greater volume of fuel to be drawn into the cylinder upon each intake. Furthermore, heating the mixture allows the use of gasoline of grades that would not be available in engines equipped with unheated carbureters. Of course, gasoline of exactly the proper grade is the best fuel in any engine, but there are occasions in automobiling when this cannot be obtained. There is a distinct advantage in a motor which will run efficiently with any grade of gasoline.

So much for the value of heating the carbureter. There is also to be considered the limit to which the heating should be carried and this is an important point. The mixture must not be warmed to excess. If it becomes too hot, it becomes a gas outside of the cylinders, which would be a condition disastrous to both efficiency and smooth running. Taken into the cylinder as a gas, the volume of fuel charge would not be as great as when taken into it as a mist—that is, finely divided gasoline carried in suspension by air. Hence, the exact opposite effect of heating to the proper degree would occur. Compression would be reduced, there would be likelihood of misfiring and surety of decreased efficiency. In adapting waste heat for warming the fuel mixture it is not desirable to apply the heat to that portion of the mixing chamber immediately around the aspirating nozzle. This would warm the raw gasoline before it had become intimately mixed with air. The gasoline would expand and the volume of fuel reaching the cylinder would be less than otherwise. Hence, in designing the Packard carbureter, the heat jacket was placed above the nozzle, so that heat would not be applied to the mixture until it was well on its way to the engine. The bottom of the jacket is about two inches above the tip of the aspirating nozzle and is about five inches high. The butterfly throttle valve is approximately midway of its length. The gasoline-laden air, in rushing past the butterfly valve, is crowded against the wall of the jacketed passage and thus placed in close contact with the heat.

How the Utilization of Surplus Heat is Effected.

Water shunted from the motor-cooling water system is used as the source of heat. It is taken from the top of a cylinder, where it is warmer than at any other point in its cycle of circulation. Through a ⅜-inch copper pipe it is led to the top of the carbureter jacket. From the bottom of the carbureter jacket there is a straight lead to the suction side of the water pump. This direction of flow is adopted to allow the convenient and positive draining of the carbureter jacket, by simply opening the pump drain.

In the pipe between the cylinder and the carbureter there is a valve, placed close to the cylinder, which allows the water to be entirely shut off from the carbureter, permitting the convenient removal of the carbureter for any desired purpose. It also allows the regulation of the volume of water flowing through the carbureter jacket, as for summer and winter. Such regulation in practice, however, has been found to be hardly desirable, the flow being left practically the same at all times and under all conditions. It is obvious that this heating system does not in any way require motor power for its own maintenance. It is strictly a power recovering system which does not add mechanical complication or new source of trouble to the engine.

The application of surplus heat to the lubricating system of a motor has the single object of rendering the flow of oil surer and always reliable, regardless of changes in temperature. It affects motor efficiency indirectly, by increasing effectiveness of lubrication, which is, of course, an important factor in the smooth running of a gasoline motor.

Cold oil is not easily forced through small pipes. The ordinary exhaust pressure systems of lubrication apply from one to two pounds' pressure per square inch. This will not move oil readily through the oil leads in cold weather. Even in some of the mechanical systems in which a greater pressure is applied, difficulty is experienced with oils in the winter.

Warming the oil can do no possible harm and insures a viscosity which makes it flow readily through small pipes, regardless of exterior temperature conditions. In the use of an oil warming system it has been found that the most severe weather changes have not made any appreciable difference in the operation of the oiling apparatus. The Packard company uses and recommends a certain brand of light oil. The heated lubrication system would, however, allow the use of the heaviest oils, even Albany grease, which would, under the application of heat, become a thin liquid. In fact, such greases have been used successfully in that system. The use of a light oil is for an entirely distinct consideration—that it does not tend to interior carbonization, as do heavy oils.

In Packard practice the benefit of waste heat is secured without cost in power or in consumption of otherwise useful heat or

energy. The oil reservoir is a vertical copper cylinder, which is placed above the motor crankcase close to and between the two pairs of cylinders. All of the other elements of the oiling system are ahead of the dash and under the bonnet, in the warm region surrounding the engine, with the exception of the glycerine-filled sight feeds. The oil is fed to the engine by a positive plunger pump. The direction of flow is from the tank to the pump; from the pump to the sight feeds, and from the sights to the motor crankcase, where it lubricates the various bearings and cylinders by splash.

The tank being directly on top of the crankcase, it is combined with the crankcase vent pipes, this combination and disposition being the subject of letters patent. The vent pipes extend upward through the oil tank, with caps above. They thus assist in the heating of the oil tank, by interiorly applying the heat value of the crankcase gases that arise through them. The construction also tends toward cleanliness, as the high vent pipes allow the escape of the crankcase gases without that dirty overflow of oil and dirt that is common in the case of low vents. The gases, in rising, have a chance to condense and release oil carried by them, allowing it to flow back into the crankcase. The screw-capped oil tank opening being on top and between the two vent caps, the arrangement gives both accessibility and compactness.

The whole system is a simple unit that avoids complication, the only mechanically-operative part being the one plunger pump, which would be required in any kind of mechanical oil feed. The increased efficiency through heat recovery is obtained simply by disposition and the arrangement of parts. Whatever it adds to efficiency and reliability is a gift. It is not creation of energy. It is thrift in the use of energy.

COUZENS TALKS ABOUT EXPORT TRADE CONDITIONS

IN spite of his 38 nights on sleeping cars and local steamers which he took in the course of his dash around the Continent, and from which he returned on the *Kaiser Wilhelm der Grosse* last week, James Couzens, former chairman of the American Motor Car Manufacturers' Association, and manager of the Ford Motor Company, looked hale and hearty when seen at the New York branch, during the extremely brief period that he allowed himslf in which to tell of the results of his trip abroad.

"There is a fertile field on the other side for the American car," says Mr. Couzens, "but it needs tilling and tilling in the European way. Our methods may be better, but they are not European methods, and to get the business it must be done in their way. There have been comparatively few American cars sent abroad within the past three or four years, and the chief impression of what the American maker can do comes from the few now antiquated specimens that were exported several years ago. The feeling toward American cars is not unfriendly, but in order to obtain a proper foothold the European situation will have to be carefully studied."

As Mr. Couzens visited practically every important city in Europe and covered every Continental country, barring Turkey and Greece, he may be said to have covered the ground pretty thoroughly, so that his views should carry considerable weight.

"Relative to trade conditions I observed," Mr. Couzens said, in answer to an inquiry, "I might say that the very short time spent in each European country, and I visited them all, I had not an opportunity of investigating as closely as desirable the entire trade situation, as my time was devoted very largely to looking after conditions of the Ford in these various countries, and any remarks I make are apt to be based more or less on the experience of our company in these various places and the prospects for the future of our cars there.

"Speaking generally, the prospects for American manufacturers in Europe would appear to be good if they will meet the conditions and requirements of these various countries, but to attempt to do so on the lines on which business is done in America would make it a fruitless task. The American manufacturers, not only in the automobile industry, but in almost all lines of manufacture, have not catered to European requirements and have not given the European business the care and attention it should have, considering the possibilities. The European public are not unfriendly to American goods in general, but they are somewhat unfriendly to American automobiles, due to the many unsatisfactory and unprofitable experiences they have had in importing American small cars during the early days of the automobile industry. Cars of that time, of course, were not nearly as satisfactory as they are to-day, but nevertheless the bad impression was left and no attempt made to correct it. Consequently, the final and only decision that could be reached was that all American cars are practically at the same state of progress even to-day, and that American makers have made no advances or improvements in construction. It is consequently a difficult task for American makers to correct this impression and convince European buyers that we have improved our product and that it is now equal to any in the world, besides being cheaper, due to our advanced manufacturing methods.

"As to what car will best meet the popular demand," continued Mr. Couzens, "I might say that, at present, there is no demand for automobiles in Europe, as the majority of the makers are overstocked with cars and are exerting strenuous efforts to create a demand for their product. There is no demand for American cars except as you may cultivate it, and it is up to the American manufacturers, if they want the European business, to create and cultivate a demand for whatever product they believe there is the greatest future for. There does not appear to be any particular section of Europe that offers the best inducements to agents, because, from my casual observation, the European industry is practically in the same condition in every country, with the possible exception that Austria-Hungary and the Scandinavian countries may not be as far advanced in the use of automobiles as such countries as Germany, France, Italy, Holland, Belgium, etc. Whatever business is to be had has to be developed. In other words, there is no fruit over there ready to pick, as it has to be cultivated, nursed, and one must wait until it ripens; and the manufacturer who can and will do this will surely pick the fruit, as it will eventually ripen and without undue delay.

"Not being particularly interested in commercial vehicles, I paid little or no attention to their progress, except to note that Germany was making the greatest strides in the manufacture of these cars and was devoting a great deal of time, effort and money toward their development. It is hard to say whether European manufacturers have reached standardization, although to a large degree it would appear as if they had. In fact, it would appear as if they had probably done as much in this direction as American manufacturers, and as to that there is more or less controversy."

While abroad Mr. Couzens visited London, Amsterdam, The Hague, Rotterdam, Antwerp, Brussels, Paris, Barcelona, Madrid, Nice, Monte Carlo, Genoa, Turin, Milan, Rome, Venice, Vienna, Warsaw, Moscow, St. Petersburg, Budapest, Helsingfors, Stockholm, Christiana, Gothenberg, Copenhagen, Hamburg, Berlin, Cologne, Frankfort, Heidelberg, Carlsruhe, Strassburg, Zurich, Lucerne, Paris and Cherbourg.

He said in many places where there were about a million people there were only 50 automobiles. He secured a record of the number of automobiles in every town in Europe and the number of people able to buy new machines. Probably no man has gone more deeply into the subject. Mr. Couzens called attention to the fact that the exports of American machines now exceeded the importations.

DOINGS OF ACTIVE AUTOMOBILE CLUBS

A CALL TO THE BIG NEW JERSEY CLUB.

NEWARK, N. J., Aug. 26.—The *Sunday Call* prints the following: "If the New Jersey Automobile and Motor Club wishes to be of real service to motorists it can undertake no better work than the establishing of roads between Jersey City and Newark that would not be a disgrace to the State.

"New Jersey has been called 'foreign territory' by motorists of other States. This has been not so much because of legal conditions, nor yet of any refusal to allow her roads to be torn up by a Vanderbilt cup contest, but for the reason that no good thoroughfares lead from the metropolis of this State to New York, the center of automobile activity in America.

"No motorist who has attempted to drive his car at more than snail's pace across the prehistoric Plank road or the dusty and rutty Turnpike will deny that conditions are disgraceful.

"New Jersey's largest motor club has done much for automobiling, yet it is doubtful if working on the law or running endurance contests, valuable as are these evidences of activity, ever brought such great benefit as would come through the repairing and oiling of the Turnpike or, better yet, the proper surfacing of the thoroughfare leading from the heart of the city—the Plank road.

"Much is said concerning the poor state of repair of some of our country roads, yet their condition is ideal compared to the trails across the Hackensack meadows. A great opportunity awaits the New Jersey organization."

OUQUAGA CUP TOUR IN SEPTEMBER.

BINGHAMTON, N. Y., Aug. 26.—At the annual meeting of the Binghamton Automobile Club, held last week, the route for the Ouquaga cup tour was decided upon and the date fixed for the third week in September. From this city the tour will extend to Owego, Cortland, Syracuse, Auburn, Geneva, Rochester, Buffalo, Niagara Falls, Bath, Danville, Elmira and back to Binghamton. The distance is about 550 miles.

The annual election of officers resulted in the election of Benjamin F. Welden as president; William G. Faatz, vice-president, and S. M. Frechie, secretary-treasurer. The matter of a clubhouse was informally discussed at a banquet after the meeting, and the project will come up later for official consideration.

MIDDLEBORO CLUB GIVES PUBLIC WARNING.

MIDDLEBORO, MASS., Aug. 26.—With a view of aiding in the enforcement of the local ordinance, recently put in force by the Selectmen and which limits the speed through the town to twelve miles an hour, the club adopted a novel scheme. A number of men were provided with red flags and a supply of cards setting forth the object of the club and giving all the required information. These were handed to the driver of every car entering the city on the main roads, the red flag playing an important part in the proceedings. The work was kept up all day long, and the officers of the club feel that it went a long way toward accomplishing the object desired.

PEORIA, ILL., HAS ANOTHER AUTOMOBILE CLUB.

PEORIA, ILL., Aug. 26.—Twenty-seven owners of Glide automobiles have formed the Glide Automobile Club, with the following officers: President, M. E. Magruder; vice-president, A. C. Berkstresser; secretary, A. Y. Bartholemew; treasurer, E. P. Churchhill. A club run to Mossville, with a chicken supper as an inducement, is scheduled for Saturday next. A fortnight from the same day there will be a run to Lake Senschwine, spending the night at the Under Cliff Hotel and returning the following day, Sunday, September 14.

QUAKERS FIND POSTPONEMENT ADVISABLE.

PHILADELPHIA, Aug. 26.—Members of the Contest Committee of the Quaker City Motor Club, which is promoting a race meet at Point Breeze Track, are up in arms at the promiscuous manner in which the A. A. A. grants conflicting sanctions. Having originally selected Saturday, August 31, that date was abandoned and a sanction secured for the following Saturdey, September 7. When the Quakers learned later that Morris Park had been granted a sanction for the same date, and realizing that they could get few New York entries if they held on to the 7th, they reluctantly announced another postponement, this time to the 14th. "Surely," said one of the Quaker Motor Club officials, "those who control racing should see to it that the holder of a sanction should be free from competition, and two permits should not be issued for the same day in cities as close together as are Philadelphia and New York. We count on quite a number of entries from the metropolis, and of course we can't get them with a meeting running there on the same day. There is nothing left for us to do but postpone."

GRAND RAPIDS TO ENTERTAIN CHICAGOANS.

GRAND RAPIDS, MICH., Aug. 26.—Correspondence between the local automobile club and the Chicago Automobile Club has resulted in the dicision of the latter club to make Grand Rapids its objective point in its next endurance run, which will come off later this month or early in September. Dr. D. Emmet Welsh, secretary of the Grand Rapids Automobile Club, has sent Assistant Secretary W. W. Crawford, of the Chicago club, revised maps of the route, and the run will be made by way of South Bend, Elkhart, Three Rivers and Kalamazoo to this city. The city is expecting the largest gathering of strange automobiles that has ever been within its limits.

The club has been so successful this year in its new country home at Cascade, and has grown so rapidly, adding fully 200 new members this year, that negotiations are on foot now for the purchase of the Cascade Springs Hotel, to be fitted up for a new abode.

COLORADO CLUB PLANS COUNTY ORGANIZATION.

CANON CITY, COLO., Aug. 23.—With a view to perfecting an organization comprised of all the autoists in the county, a special meeting of the Cañon City Automobile Club was called on Thursday of last week, and was held at Miller's Roof Garden. Unfortunately, threatening weather prevented as large an attendance as had been anticipated, as invitations had been issued to autoists in Florence and Portland, as well as the coal camps, Dr. J. W. Cline, of Florence, being the only one to represent his town. A committee consisting of Dr. Cline, Colonel J. Q. MacDonald and J. J. Armstrong was appointed to lay the matter of a county organization before the automobile owners of Florence, and there is little doubt but that they will unite with the local club in the proposed movement. The principal object sought is the improvement of the county roads.

DETROIT'S CLUB UNUSUALLY PROSPEROUS.

DETROIT, MICH., Aug. 26.—President Harry Skillman and his assistants in the Detroit Automobile Club are indefatiguable workers, and under their regime the club is prospering to a gratifying degree, its present membership reaching 300, of whom more than 50 have been added during the past half year. Not the least of the attractions offered by the club is its country home at Pine Lake, about thirty miles from the city. Many improvements have been made, new furnishings installed and facilities provided in other ways to take care of the rapidly increasing membership, so

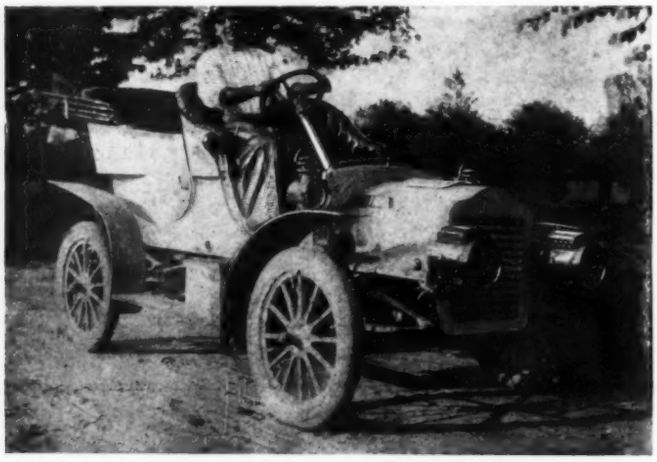
it is doubtful if there is a better equipped club anywhere in the State or, for that matter, a more complete country home of the kind in the United States.

KANSAS AUTO CLUBS GROWING FAST.

SALINA, KAN., Aug. 23.—The number of Kansas automobile clubs was augmented by one with the organization of the Salina Automobile Club here a few days ago, with a charter membership of twenty-four autoists. It is hoped to increase the membership to fifty within a week or two, and an effort will be made to secure the State motor convention for this city in 1908. The officers of the new club are H. D. Lee, president, and Senator Fred A. Quincy, George Wergerbur, Leon Rash and H. L. Center were appointed an executive committee, the nomination and election of the remaining officers being deferred until a little later, when there is every prospect that the new organization will include on its roll all those interested in automobiling in this section.

VIRGINIA VALLEY TO BE SCENE OF TOUR.

NORFOLK, VA., Aug. 26.—One of the most ambitious tours ever undertaken by a Southern automobile club is now under consideration by the Tidewater Automobile Association of this city. It is proposed to leave here the early part of September and



MRS. S. W. M. HARRIS, VIRGINIA'S PIONEER WOMAN AUTOIST.

spend ten days or two weeks on a trip up the Valley of Virginia. A committee is now studying the nature of the country and the accommodations afforded in order to make up the itinerary. "We all propose to keep within hailing distance of each other," says a member of the committee, "and it may be stated there will be no scorching or anything of that sort, calculated to bring us into disfavor with folk along the route."

BUFFALO WILL CELEBRATE OLD HOME WEEK.

BUFFALO, Aug. 25.—Never in the history of automobile parades have so many prizes been offered as will be given for the decorated and illuminated parade under the auspices of the Automobile Club of Buffalo, to be held Tuesday evening, September 3, during Old Home Week, in this city. Secretary Dai H. Lewis has already purchased twenty-three silver cups for the best decorated cars. There is every prospect of making the affair one to be long remembered.

OREGON DEMANDS LEGAL TEST FOR DRIVERS.

PORTLAND, ORE., Aug. 22.—The Portland Automobile Club has put itself on record as favoring rigid examinations for professional chauffeurs before the latter are allowed to follow their vocation. In addition to favoring legislation on this important subject, the club also asks that children under 18 years of age be prohibited from operating automobiles in the streets.

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows and Meetings.

Oct. 24-31.....—New York City, Grand Central Palace, Eighth Annual Automobile Show, Automobile Club of America and the American Motor Car Manufacturers' Association.

Nov. 2-9.....—New York City, Madison Square Garden, Eighth Annual Automobile Show, Association of Licensed Automobile Manufacturers.

Nov. 29-Dec. 6.—Chicago, Casino Garden, Second Annual Auto Parts Show. A. M. Andrews, Secretary, 184 La Salle Street.

Nov. 30-Dec.7.—Chicago, Coliseum and First Regt. Armory, Eighth Annual National Automobile Show, and First Annual Commercial Vehicle Show, National Association of Automobile Manufacturers.

Dec. 14-21.....—St. Louis, Mo., New Coliseum, Second Annual Auto Show, St. Louis Automobile Manufacturers' and Dealers' Association.

Dec. 28-Jan. 4..—New York City, Madison Square Garden, Importers' Salon. C. R. Mabley, secretary and manager.

April 6-11.....—Buffalo, Convention Hall, Motor Boat and Sportsman's Show. D. H. Lewis, manager.

Races, Hill-Climbs, Etc.

Sept. 2.....—Wildwood, N. J., Straightaway Race Meet, Motor Club of Wildwood.

Sept. 5.....—Chicago, Cedar Lake Economy Run, Chicago Motor Club and Chicago Automobile Trade Ass'n.

Sept. 6-7.....—New York City, Morris Park Track, 24-Hour Race Meet. Morris Park Motordrome Club, office, Times Building.

Sept. 7.....—Hartford, Conn., Hill Climb, under the auspices of the Automobile Club of Hartford.

Sept. 7.....—Minneapolis, Minn., State Fair Race Meet of the Minnesota State Automobile Association.

Sept. 9-10.....—Pittsburg, Pa., Brunot's Island Track, Race Meet, Automobile Club of Pittsburgh.

Sept. 14.....—Philadelphia, Point Breeze Track, Quaker City Motor Club.

Sept. 14.....—Jamestown (Va.) Exposition, Aeroplane Contest for "Scientific American" Prize.

Sept. 14.....—Albany, N. Y., 95-mile Road Race, under the auspices of the Albany Automobile Club.

Sept. 20.....—Milwaukee, Wis., State Fair Grounds Track, Race Meet, Milwaukee Automobile Club and Milwaukee Dealers' Association.

Sept. 21.....—Harrisburg, Pa., Middletown Track, Race Meet, Motor Club of Harrisburg.

Oct. 21.....—St. Louis, Mo., International Aerial Race of the Gordon Bennett Prize, Aero Club of America.

FOREIGN.

Shows.

Aug. 1-Sept. 30.—Holland, Amsterdam, International Exhibition of Motors and Machines, Palace of Industry.

Sept. 28-Oct. 7.—Denmark, Copenhagen International Automobile Show.

Nov. 11-23.....—London, Olympia Motor Show.

Nov. 12-Dec. 1..—Paris, Exposition Decenniale de l'Automobile, Grand Palais, Esplanade des Invalides, Automobile Club of France.

Jan. 18-Feb. 2..—Turin, Italy, Fifth International Automobile Exposition, Palace of Fine Arts, Valentino Park, Automobile Club of Turin.

Races, Hill-Climbs, Etc.

Aug. 23.....—Belgium, Ostend Motor Boat Meeting.

Sept. 1-2.....—Italy, Brescia Circuit, Florio Cup. A. C. of Italy.

Sept. 15.....—Austria, Semmering Hill Climb, Austrian Automobile Club.

Sept. 15.....—France, Chateau-Thierry Hill Climb.

Oct. 1-15.....—Paris, Electric Vehicle Competition, Automobile Club of France.

Oct. 20.....—France, Gaillon Hill Climb.

Nov. 1-15.....—France, Voiturette Contest near Paris.

May 16, 1908...—Sicily, Targo Florio, Automobile Club of Italy.

June 20-July 5, 1908.—Grand Prix, Dieppe Circuit, Automobile Club of France. (Exact date to be announced.)

July 14, 1908...—Paris to London, Aerial Race.

BAY STATERS OF A. A. A. ACTIVE AND PROGRESSIVE

BOSTON, Aug. 24.—In its sign-board campaign, the Legislative Committee of the Massachusetts State Automobile Association has just made an important step forward. This is the permission which has been secured from the New England Telephone and Telegraph Company for the erection of the cautionary road signs of the association upon the poles of the company throughout the State. The telephone company has heretofore been very conservative about allowing the use of its poles for any purposes except those of the company, but Chairman Lewis R. Speare, of the Legislative Committee, was able to bring to bear upon officers of the company arguments which brought about the desired concession. The committee, through the constituent clubs of the association, will soon begin the erection of these signs, and it is planned to post the principal roads of the commonwealth as rapidly as possible. The signs will be uniform in style and will bear the warning, "Drive Carefully," followed by a notice of the road conditions ahead. The signs will be posted at dangerous curves, cross-roads and the like, and it is thought that drivers will pay more attention to warnings posted by the State association than they do to those of local authorities.

The arrangements for the convention of the State association, to be held September 6 to 9, at Hotel Wentworth, Newcastle, N. H., are making good progress, and the gathering bids fair to be one of the largest of New England automobilists ever brought together. The programme includes club runs on Friday, with an entertainment in the evening; a baseball game between teams representing two of the leading clubs Saturday afternoon, and a general business meeting in the evening, at which the Hon. Samuel L. Powers, formerly a Massachusetts Congressman, will make an address. Sunday there will be a short run and a clambake, and for Monday the hotel management has provided a gymkhana tournament for owners of cars.

Besides the pleasure side of the convention, the committee in charge hopes to make the gathering important in a business way. There will be meetings of the officers and committees of the various clubs, at which current problems in automobiling will be discussed. Proposed legislation will come up, and the policy of the automobilists for the next session of the General Court will undoubtedly be outlined. One subject that has been set for discussion is the so-called "light" bill, to compel all vehicles on the roads at night to carry lights of some sort. This bill has been side-tracked by several legislatures, but the automobilists probably will make a determined effort to have it put through next winter when the legislature reconvenes.

The committee in charge of the convention consists of Lewis R. Speare, of the Bay State Association; Elliot C. Lee, of the Massachusetts club; J. P. Ccughlin, of the Worcester club; S. L. Haynes, of the Springfield club; W. H. Chase, of the Wachusetts club; H. R. Burbeck, of the Brockton club, and A. E. Bliss, of the Malden club.

THE CONGRESS ON UNIFORM LAWS.

President William H. Hotchkiss, of the American Automobile Association, and Chairman Charles Thaddeus Terry, of the Legislative Board, were in attendance at the recent Congress on Uniform Laws, held at Portland, Me. The first three days of the session last week were devoted to a consideration of the reports of the various committees, and those accepted or modified were this week considered by the Congress at its joint session with the American Bar Association. The Congress is made up of commissioners appointed by the governors of the different States. Mr. Terry has been one of the three commissioners from New York State for some time past, and recently Mr. Hotchkiss was appointed by Governor Hughes to fill a vacancy.

While not much was done on the subject of automobile laws at the session, it is a certainty that much attention will be paid to uniforming these laws at the next session of the Congress.

FOREIGN IMPRESSIONS OF AN AMERICAN TOURIST

SAN FRANCISCO, CAL., Aug. 20.—G. A. Hensley, a well-known San Francisco autoist, has just returned home from an extended tour in Europe, where he drove his White steamer several thousand miles. Mr. Hensley had some most interesting experiences. The tour started in February of this year at London, from where the tourist went to Havre and then to Paris. "I wish I had crossed the Channel in my auto," jokingly remarked the autoist; "if I had, I wouldn't have been seasick."

From France he traveled through Spain. Speaking of King Alphonso's realm, Mr. Hensley said it was, without excepting the Alps, the coldest, most desolate, God-forsaken and degenerate country he ever saw. "Certain of the peasantry are so ignorant regarding the general appearance of an automobile that, from their actions, it seems they think some fierce animal is upon them. In many cases they run and never look back, and in one instance two peasant women endeavored to climb the same tree. We met with such road experiences all through Spain, and especially along the highway between Burgos and Madrid, known as the Upper Castile road, was traveling very arduous, owing to the roads being congested with mules, oxen and peasantry, most of whom had never seen an auto before. On our appearance they were thrown into indescribable confusion." In Granada, Spain, over half of the population are beggars, according to Mr. Hensley, who is of the belief that some of them really cut off their arms and otherwise disfigure themselves to get money.

From Spain he toured to Marseilles, Nice, to Monte Carlo, and then through Italy to Milan. From Milan he went to Venice. The local autoist crossed the Alps in the teeth of a blinding snowstorm to enter Austria. Driving under these conditions, with snow at times up to the hubs, was very difficult.

Mr. Hensley made two tours in Germany. Perhaps one of his most successful pourneys while touring on the Continent was a trip up the Rhine and across Germany, covering a distance of 350 miles in a day's run.

"My one regret in connection with my tour abroad was that I did not take a chauffeur from this country, instead of being obliged to depend upon the European article. I was rather unfortunate in my selection of an English driver, and the one I engaged succeeded in having three accidents in one week with my car.

"With the exception of London, where there are a great many Whites in use, the steam auto attracts unusual attention. Many cannot realize how so large a machine is able to tour the country without restoring, the majority of opinions among those unfamiliar with steamers being that my car was an electric. This impression was created through the noiselessness in the running of the car.

"The general attitude abroad toward American cars (this does not apply to the steamer) is one of contempt. Yet I visited most of the largest automobile factories in Europe and noticed that about one-half of the machinery, like the gear-cutitng and other appliances, are of Yankee production."

THE AUTOMOBILE

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Status of the Six-cylinder Car for 1908. Whatever may be the arguments pro and con where the six-cylinder car is concerned, whether from a strictly technical point of view, or from that of the user who seeks utility alone, there is one thing certain, and that is many of this country's most prominent makers will at least have a go at it for next season. This became evident some time ago, and, in the natural course of events, no other outcome was to be expected. There has been so much talk about the six-cylinder car and its obvious advantages that the automobile-buying public has become infected with the idea. Consequently, it seems reasonably certain that there will be a very greatly increased demand for this type of car during the coming season, and, with that foresight that usually characterizes him in such matters, the American manufacturer is preparing to reap the harvest.

The successful experience of the few pioneer makers in this country who have built cars of this class for the past two years has served to demonstrate that there is a large business to be done in this field. Hence, many manufacturers have made preparations accordingly, and the fact that they regard six cylinders as superior to four, from either a manufacturing or an engineering point of view, has little or no bearing on the matter. There is a demand for an increased number of cylinders, and there is every prospect that it will assume large proportions in the near future, and the average maker is willing to meet it.

Why Special Types of Cars Are Difficult to Market. That it is one thing to evolve a radically different type of automobile and quite another to sell it is something that the average inventor finds hard to realize. Regardless of the numerous meritorious features it may embody from an engineering point of view, it is generally a very difficult matter to find a sufficient number of purchasers for it to warrant its manufacture. But little observation is required to understand the reasons therefor. The autoist who becomes the owner of such a machine finds himself compelled to master it from beginning to end, either without assistance or with what the maker will extend. If he breaks down on the road it is usually useless for him to appeal to drivers of passing cars, for no matter how willing the latter may be to aid him they are frequently helpless.

He must, indeed, be firm to his purpose and unswervingly enthusiastic in his liking of the machine to continue as its advocate, for neither among autoists as a class, nor in the journals devoted to automobiling, does he find any reference to the problems that confront him. In short, he is in a class by himself, and even though converts of his own kind may be comparatively numerous, they are too widely scattered to be of any mutual help to one another. The autoist who will remain faithful under such circumstances is a rarity, usually with some well-set mechanical ideas of his own, so that it is not difficult to understand why revolutionary designs are not enduring.

Why Should Cost of Selling Autos Be So High? Given machinery of any other nature, whether of a special class or not, and of the same value as the average modern automobile, and it is safe to say that it does not cost a fraction as much to place it in the hands of the purchaser. It is a matter of common knowledge that a certain, and not particularly small, section of the selling end of the automobile industry has been characterized by an amount of profligacy and extravagance that have brought opprobrium on the business as a whole. It goes without saying that the taint has not been general by any means, but, nevertheless, it costs far more to dispose of a $5,000 automobile than it does to sell $5,000 worth of machinery, whether for printing, laundry work, or manufacturing of any kind.

All of which merely goes to show that the business of selling automobiles is still on a very artificial basis, and it must be admitted that the immediate future offers no prospect of betterment, which, however, must come sooner or later. It is plain to be seen that things must inevitably tend that way as a natural result of increasing competition. The great cost of marketing automobiles is one of the things that contribute very largely to make the "poor man's automobile" a dream of the future, but the placing of the business on a sound economic basis will bring its realization far nearer.

Awakening of the Agriculturist to Auto's Benefits. At last is the farmer coming to a realization of the fact that the automobile benefits rather than injures him. In fact, he may be said to have awakened, if the significant action of the Farmers' Union of Floyd County, Ga., may be taken as a criterion. More severely restrictive measures than have ever been seriously countenanced in other States have been pending before the Georgia Legislature, and this body of farmers has gone on record as opposed to any legislation prohibiting automobiles from running on Georgia highways, on the ground that *no factor has been or will be so important in the development of good roads as the automobile.* It has come at last, though a long while on the way. The excellent example thus afforded may well be patterned after by other farming communities.

It may be that there are several American makers who have the idea in mind, but it is known that one has conceived something which will cause the farmer to sit up and take notice when the farm utility car appears.

A. A. A. AND ITS CONDUCT OF AUTO RACING

AUTOMOBILE racing unquestionably is one the most difficult forms of competition to govern in a manner satisfactory to all concerned—in fact, it can never be controlled in such way as to please all participants. It is commercial sport, wherein the winner profits by victory and the defeated sometimes suffers a loss of prestige. Whatever organization looks after automobile racing, it will receive a generous amount of criticism and a sparse quantity of commendation. This is inevitable, and the officers of the American Automobile Association are keenly aware of the fact. Nevertheless, it is the impression of the majority that this national organization is the proper body to look after the sport, in addition to its other important work, and the foisting of it to other control would be looked upon as a confession of weakness and inability to cope with the complicated situation.

No rules will ever be framed, according to a consensus of opinion of the experts, which will be entirely to the liking of all contestants, and it ever must be a case of agreeing upon something acceptable to the majority. In the drafting of these rules the A. A. A. Racing Board has always considered the advice of its technical advisors, who represent the three big bodies of automobile manufacturers in this country, with a fourth member from France. Relying upon these four experts is the policy of Chairman Jefferson de Mont Thompson, and the four selected were named because of their prominence and experience in automobile racing. There can be no objection whatever to a thorough discussion of the racing rules at any time, and there is no reason whatever why the A. A. A. Racing Board should hesitate to formulate regulations meeting the desires of the greatest number of manufacturers. Much has appeared in print of late, and below are given some of the most recent developments in the situation.

RACING BOARD CONTAINS MEMBERS NATIONAL TRADE BODIES

By A. R. PARDINGTON, Acting Chairman A. A. A. Racing Board.

IN organizing the Racing Board, the idea of representing all interests was carefully considered. The fact that the Vanderbilt Cup race has been conducted for three years past in a manner satisfactory to the international participants speaks for the general efficiency of the Board, which, of course, practically composes the Cup Commission. It is a source of keen disappointment that the commission found its promising efforts for the holding of a 1907 race interfered with by opposition from a most unexpected source. Those occupying official positions in any organization are at times subjected to outbursts of unjust and biased criticism, their acts being purposely distorted, often by interested persons who have axes to grind. But when the entire facts are generally understood in connection with the inability to conduct a 1907 Cup race, there will be a change of sentiment among the few misled by untruthful assertions and insinuations.

The Racing Board contains experienced amateur automobilists and also representatives of all the national automobile manufacturing associations: E. R. Thomas, N. A. A. M.; A. L. Riker, A. L. A. M., and Henry Ford, A. M. C. M. A. In addition France supplies a member, J. J. Mann, of the Automobile Club of France, which is composed for the most part and is controlled by the makers of that country.

The publicity which has been given recently to automobile race meets conducted in several cities under the auspices of the local automobile clubs affiliated with the American Automobile Association has contained much that was not authentic or reliable.

In a score of meets held, only two regular protests have been received by the Racing Board. One of these came from the Automobile Club of St. Paul, Minn., and the other was a complaint of a Brighton Beach entrant that he had not received a prize. The acting chairman has given prompt consideration to these and other minor complaints and has been conducting private investigations of the charges preferred, which, together with other reports, will be presented at a meeting of the executive committee of the Racing Board, to be held in New York, Thursday, August 29.

The Racing Board received and granted a series of sanctions to the United States Motor Racing Association upon the recommendation of automobile clubs which had entered into agreements with this racing association to promote and conduct endurance contests in their respective localities, including sanctions at Chicago for a meet under the auspices of the Chicago Automobile Club and a meet at Brighton Beach under the direction of the Long Island Automobile Club of Brooklyn.

It is a well known fact that both the Chicago and Long Island Automobile Clubs were among the pioneers in the American Automobile Association, and have in the past conducted many successful contests both on track and road.

It has been the custom of the Racing Board to grant sanctions requested by any club affiliated with the American Automobile Association without the investigation which is always given to a sanction request not coming through the affiliated clubs of the association, the Racing Board believing that the association clubs should be fully able to supply capable officials. If the officers of meets fail to conduct such meets properly, it is a matter for the club to investigate and report to the Racing Board for consideration.

The acting chairman, pending a meeting of the Racing Board, has cancelled all requests for reservations made by the United States Motor Racing Association and other independent promoters. At its meeting to be held Thursday the Board will consider the question of the penalty to be imposed upon the United States Motor Racing Association and other independent promoters for failure to comply with the rules of the association, or for failure to make awards incident to successful competition. This suspension will apply to the individuals of these promoting associations as well as to the organizations themselves.

A. L. A. M. UNABLE TO FORMULATE SATISFACTORY RULES

IN an interview Monday last, E. H. Cutler, general manager of the Association of Licensed Automobile Manufacturers, said he was of the opinion that the present rules for conducting the various events throughout the country were inadequate to get the best results, both for the industry and for the general public. When pressed for a solution, Mr. Cutler admitted that a manufacturers' committee had, after many trials and after working over them three or four months, been unable to form a set of rules that would meet all the requirements necessary for a thorough and honest tour or race.

Mr. Cutler was of the opinion that the adoption of universal horsepower rating was the remedy for the existing evils, and he advocated that the engineers of the Association of Licensed Automobile Manufacturers, the Society of Automobile Engineers and the American Motor Car Manufacturers' Association unite in recommending the adoption of a universal horsepower rating,

such as was being used, perhaps, by the A. L. A. M. "The adoption of this formula," says an A. L. A. M. press sheet, "would be the first step toward reorganization of competitive rules and would be the basis for all classification of cars in any of the events that will take place. As the situation now stands, it did not seem fair either to the manufacturers or to the public that a 12-horsepower car costing $1,500 should be required to do the same amount of work as a 60-horsepower selling for $5,000. Under the present rules there is no provision made for classification and many instances can be cited where reclassification is absolutely necessary. It is hoped that Mr. Cutler's recommendation to the engineers will meet with ready response from the engineers of the other organizations, for, after all, it is the engineer who really knows the merits of the car and is in a position to arrange for classification in a manner which will give entire satisfaction to all."

WHERE MUCH CRITICISM OF THE A. A. A. COMES FROM

By JOHN C. WETMORE, in the New York *EVENING MAIL*.

THE American Automobile Association, as the national organization, is, of course, in the nature of things, open to criticism as well as praise. This is a country of free speech and a free press. Individuals have a right to wag tongues just the same as writers are free to wield pens. An organization that represents any one class must stand for criticism as well as praise and take the bitter with the sweet.

There has been a lot of criticism of the A. A. A. of late. It were better, however, did it come from well meaning friends instead of from enemies, whose attacks have no sincere information of conditions in view. Most of the criticism, however, comes from two sources. The reasons behind their attacks are very well known. In one case the attacks have their foundation in disappointed personal ambition and personal prejudice against a trusted A. A. A. leader and adviser, and the other from the failure of the "man behind the gun" to induce the national organization to lend itself to a business advertising scheme.

It was only to be expected that a coterie of importers would readily lend itself to the purposes of the foremost journalistic exponent of foreign as against American cars, especially since that purpose was an attack on a national organization confessedly a backer of the home product. It was, however, a bit surprising that several prominent local exploiters of American cars should have allowed themselves to be quoted as joining any hue and cry having in view the destruction of a national organization which is making honest effort to build up the sport and industry.

As R. H. Johnston put it at the Moore dinner, the A. A. A. needs correction from the inside. Reform, however, should be striven for by men as friends and not as enemies of an organization at last pretty nearly national and trying to become altogether so by the establishment of an individual membership.

Now that we are on the eve of a popular vogue for track racing there is need for new and revised rules. The Importers' salon makes a timely suggestion that a standard formula for rating horsepower be adopted. The criticism that horsepower classification on the mere say-so of makers, dealers and entrants is ridiculous and unfair is just. Sufferers like Roberts should be protected by a rule making clubs responsible for the prizes at meets to which the clubs give the sanction of their names. A lot of other changes, amendments and reforms in the rules and conduct of automobile racing are needed, and can be secured without the disruption of so potent, useful and sincere a body as the present national organization.

The only suggestion for a substitute advanced by those advocating the pulling down of the A. A. A. is the raising of the A. C. A. to that position. The clubs and motorists of the country would never stand for a purely local club, no matter how strong its claims to pioneership, size and wealth, being put at the head of the automobile affairs of the whole country.

The Racing Board has a lot of work ahead of it. It should listen to the suggestions of the friends of the national organization. The criticisms of its enemies need not be considered.

SITUATION HUMOROUSLY BUT SENSIBLY SIZED UP

By HENRY CALDWELL, in the New York *EVENING TELEGRAM*.

THERE is a lot of absurd talk about a new national association to govern racing. The talk is of combining the Licensed Association, the Independent Makers, the Importers' Association and the A. C. A., with the A. A. A. left out.

"Can you imagine," said a wealthy Flat-Tire to-day, "of a greater lot of pin-head rot than this? Picture the licensed makers and the independents (the Patrick Henrys, as they are called in polite motor circles) coming together in anything unless it was a dark room with drawn cleavers. Also try to figure out how either one of these two, particularly the Patrick Henry Association, which is purely a domestic car promoting body, could ever agree to racing rules which would suit the importing agents. Then just consider the Automobile Club of America harnessed up to three trade associations to promote racing, the very thing it is trying, and very sensibly, too, to kill. Why, as much as we all criticise the Foolish Three A's, this new proposition looks like a scream to me. The idea of a race promoted by the men who make the cars, every car different and every man's car the best.

"I agree that the A. A. A. should be arrested for obtaining money under false pretenses, but it is far ahead of such a scheme as this new one.

"Let the makers refuse to support it and it will die. But never let the makers try to run races themselves. If there is one thing the wise maker keeps away from to-day it is all manner of racing. The expense is killing to him, and if he meddles in it he kills the sport of it for the amateur. No, the frail young zephyr who conceived this idea needs a vacation in the Frayer-Miller mountains.

MORRIS PARK'S TWENTY-FOUR HOUR RACE.

Entry blanks are out for the opening meet of the Morris Park Motordrome Club, September 6 and 7. Five teams for the 24-hour relay race quickly signified their intention of competing. The 50-mile and other races will also be well filled, according to reports received at the office of the racing secretary, No. 31 West Forty-second street, New York City. Plans are now under way for lighting the track during the night hours with searchlights, as is done at the Brooklands track in England and at the famous two-mile track in Berlin.

The long race will be reported to the public by an enormous blackboard, similar to what has been used at Vanderbilt Cup races.

PLANTIFF REPUDIATES "HERALD" INTERVIEW.

Gaston Plantiff, manager of the New York Ford branch, emphatically denies the interview accredited to him in the New York *Herald* of Sunday last, wherein he is quoted as saying: "As at present conducted, automobile racing and touring events are a disgrace to this country and harmful to the industry." With Henry Ford one of the technical advisers of the A. A. A. Racing Board, it can be easily understood that Mr. Plantiff objects to having the above opinion and other remarks of a similar sort foisted upon him to bolster up an attack on the A. A. A., led by the automobile editor of the *Herald*, who has an old personal grievance.

APPERSONS DISCONTINUE BRANCH HOUSES.

George H. Strout, sales manager of the Apperson Bros. Automobile Company, of Kokomo, Ind., was in New York last Saturday and placed the Apperson line for 1908 with the Sidney B. Bowman Automobile Company, 225 West Forty-ninth street. The New York branch of the Apperson Company will be closed on September 1. This is in accordance with the new policy adopted by the company, which contemplates the closing of all branch houses and the marketing of its product through regularly appointed Apperson dealers.

The Chicago branch will be discontinued October 1 and the Apperson line in that city will be handled by Joseph Gunther, one of the best known men in the trade there and the president of the Chicago Automobile Trade Association.

The Apperson company is bringing out two new models for 1908, and the complete line will include the following cars: 50-55-horsepower touring car, fully equipped, including top, $4,200; 30-35-horsepower four-passenger runabout, with double ignition system, $2,750; "Jackrabbit" 50-55-horsepower runabout, guaranteed speed 75 miles an hour, $5,000; six-cylinder 50-55-horsepower touring car, $5,000.

FIRESTONE COMPANY RE-ELECTS OFFICERS.

AKRON, O., Aug. 26.—At the annual meeting of the stockholders of the Firestone Tire and Rubber Company, held Wednesday, August 21, the old board of directors was elected as follows: H. S. Firestone, Will Christey, R. J. Firestone and A. C. Miller, of Akron, and L. B. Sisler of Port Huron, Mich. The directors at their meeting chose the following executive board of officers: President and general manager, H. S. Firestone; secretary, S. G. Carkhuff; treasurer, L. B. Sisler; assistant treasurer, Frank R. Talbott. The last is a newly-created office, Mr. Talbott having been cashier of the company for some time past. The annuual report of the officers showed an increase in sales of 60 per cent. over the previous year, the statement being the best ever put out by the company.

Arrangements are being made by the company to make a second large addition to the plant, besides the one now half completed. This second addition is to be constructed of brick and to be three stories high.

THE WOLVERINE CAR THAT HAD A BATH.

GRAND RAPIDS, MICH., Aug. 26.—A. C. Menges, who with his gas engine man and a Chicago automobile expert, leaped the gap of the open drawbridge of the Calumet river at Ninety-second street in Chicago, recently, with the new car which he had just built, has returned to the city. In spite of the fact that the Chicago papers said that his car when removed from the river was a mass of scrap iron, he had it ready for use the same night it was taken from the stream and the next day started on the run home. The only damage done to the car was the complete wrecking of the body, and the breaking of the handle of the steering wheel. With an eye to advertising a little the endurance of his car, Mr. Menges decorated it with a sign announcing its unusual experience of leaping fifty feet to the bottom of a river, and has kept the sign on the machine during its later travels. Menges secured a very prompt settlement with the city of Chicago for the damage to his car.

WHEELS TURN IN MAXWELL INDIANA PLANT.

NEW CASTLE, IND., Aug. 24.—At 8:55 A. M., August 13, the wheels of the mammoth factory of the Maxwell-Briscoe Motor Company began to turn. Three short months ago Vice-President Fairbanks officiated at the corner-stone ceremony, but during this short interval the building has been equipped and finished. Last March, J. D. Maxwell prophesied that this plant would be turning out automobiles before the time snow flies. There was little then to justify the promise, but time has shown its fulfillment.

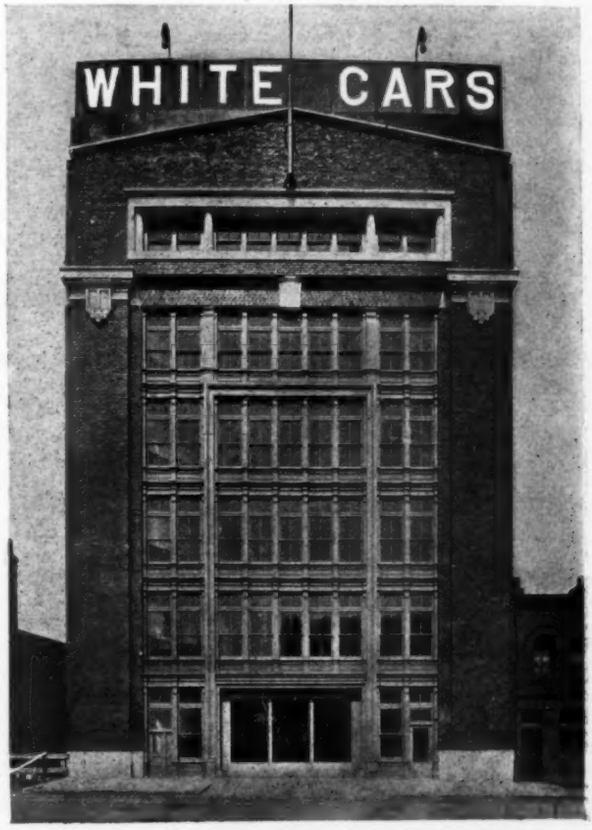
MICHELIN OFFERS FRENCH ROAD BOOK FREE.

Automobilists contemplating a tour through France will find a useful volume in the 700-page Michelin guide to France, published by the well-known firm of tire manufacturers. Copies of this book are kept in stock at the offices of THE AUTOMOBILE, Fuller Building, New York City, for disposal, free of cost, to those of our readers who may have need of them. The volume will be sent to any address in the United States on receipt of 10 cents in stamps to cover cost of mailing. The Guide Michelin, 1907, printed in French, and now in its eighth year, is accepted as one of the most complete automobile guide books to France. Its important features are sketch maps of every town in France, road distances, places of interest, police and customs regulations, about thirty colored road maps of sections of the country, and one complete colored road map of the whole of France.

WHITE OPENS MODEL GARAGE AT BOSTON.

BOSTON, MASS., Aug. 25.—The new $15,000 six-story fireproof garage just opened here at 341-343 Newbury street by the White Steamer Company of Cleveland gives to that firm one of the finest establishments of its kind to be found in New England. The new premises, which will accommodate 200 White steamers, have a 62-foot frontage and are 100 feet in height. All the floors are given over to storage with the exception of the third, which has been leased to the Boston Y. M. C. A. to be used as an automobile and electrical school.

Fireproof throughout, each floor is without a post and all appointments are of the highest class. Two fast electrically operated elevators run from the basement to the top floor, one taking all ascending and the other all descending cars. The washstands, conveniently located on the first floor, are capable of handling three cars at a time. The appointments of the chauffeurs' room on the second floor comprise individual steel lockers, a pool table, barber service and shower baths. The establishment will be opened September 3, in charge of Manager J. C. Hathaway.



THE WHITE COMPANY'S NEW BOSTON GARAGE.

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

The Marvel Automobile Co., one of the lately-organized manufacturers of Detroit, and makers of the small runabout of that name, has been petitioned into bankruptcy upon the petition of several creditors, whose claims aggregate $2,457.76. The company was capitalized at $50,000.

Edward Spring, president of the Huber Automobile Co., of Detroit, Mich., has filed a petition in the Circuit Court asking for the appointment of a receiver for the company on the ground of insolvency. The company was incorporated in 1903 with a capital stock of $100,000 to manufacture automobiles, but of late has been operating autos for hire.

Announcement of the 1908 line of Lozier cars will be made September 1, and it is said will contain much of interest to the automobiling public. The prominent standing which the Lozier product has achieved in the trade, and the fact that Lozier cars embody features distinctly their own, justifies the claim of the makers that the forthcoming announcement will be looked forward to with considerable interest.

Edward B., William J. and John L. Corcoran, who were formerly connected with the Corcoran Lamp Co., of Cincinnati, have withdrawn from that concern and will manufacture automobile lamps under the name of the Victor Lamp Co. A long lease has been secured on the new building, located at 1249 Plum street, Cincinnati, that was built especially for the new house, and a complete new outfit of modern machinery is being installed.

Pittsfield, Mass., is the latest town to change its speed laws as a result of a visit of the giant Warner autometer, and has made the limit fifteen miles per hour. The Warner people have made a hit by their method of showing the public what the exact speed of a car is, with their gigantic autometer, which is placed in the tonneau of a touring car, and is now visiting the cities and towns where ridiculous speed regulations prevail. The outfit was described and illustrated in THE AUTOMOBILE, issue of June 6, 1907, page 940, when it was being demonstrated in New York City.

Akron, Ohio, which is noted more for its rubber products than any other city in the country, is this year celebrating the one hundredth anniversary of its founding. Among the city's leading industries mentioned in a centennial edition of one of Akron's daily papers is the Diamond Rubber Co., whose remarkable growth in the past nine years is credited with having been a great factor in advancing the population of the city from 42,000 to 60,000. The increase in the automobile tire and other departments of the Diamond factories has increased the number of employees from 250 nine years ago to 2,750 to-day, and the ground area occupied by the plant from six acres to twenty-four acres. The capitalization of the company has increased from $50,000 to $5,000,000.

One of the new features which will be used in connection with the Grand Central Palace Automobile Show, in New York City, in which the members of the American Motor Car Manufacturers' Association are the chief exhibitors, is a special badge for each demonstrator, and which may be used for the purpose of identifying persons taken out for demonstrations, and no other. When a demonstrator leaves the building with a party he will surrender his badge to the officer in charge of the demonstrators' entrance, and will receive in return a ticket for the number of persons in his party, including himself, available for admission at any time within two hours. On his return and delivery of the ticket the badge will be returned to him. This badge is good for admission only between 10:30 A. M. and 6 P. M.

RECENT TRADE CHANGES.

The Manhattan Storage Company has discontinued its store at 42 Cortlandt street, New York City, and its headquarters are now located at its Forty-ninth street store, known as 1611 Broadway, where all business will be transacted in the future.

The Supreme Court of the State of New York has authorized the Matheson Company, of New York, to change its corporate name to the Palmer & Singer Manufacturing Company, and on and after September 5 it will transact its business under the latter name. The company will retain its present location, 1618-1620 Broadway, New York City.

NEW AGENCIES ESTABLISHED.

Webb Jay, well known in racing circles and formerly manager of the White Company's Chicago branch, has taken the Chicago agency for the Kissel-Kar for 1908, with the Middle West as his territory. In addition the Webb Jay Motor Co. will handle its own steam car, the initial production of which will be ready in about a month's time.

The Autocar Company, of Ardmore, Pa., has discontinued its Philadelphia branch house and transferred its local business in the Quaker City to the General Motor Car Co., which will act as agents for the Autocar in the future. The General Company is composed of W. P. Herbert and W. B. Nicholson, Jr., real estate men, and W. C. MacBride, president of the Haney-White Company, which makes mantels and does general null work. Neither of them has ever been in the automobile trade, but all are prominent owners and clubmen.

PERSONAL TRADE MENTION.

G. G. Bowersox, formerly designer and superintendent of the Springfield Automobile Company, Springfield, Mass., has accepted a position with the Pennsylvania Auto-Motor Company, Bryn Mawr, Pa.

C. Measure has been appointed by the Goodyear Tire & Rubber Company as manager of its New York branch, succeeding K. B. Harwood. Mr. Measure has had ten years' continuous experience in the rubber business.

Henry H. Hower has resigned his position as managing editor of the *Motor Vehicle* to take charge of the publicity department of the F. B. Stearns Co., of Cleveland, O. Mr. Hower was at one time editor of the automobile department of the Cleveland *Plaindealer*.

Charles Schmidt, designer of the Peerless car, sailed for Europe last week to be gone for some time. Mr. Schmidt, having completed the 1908 Peerless, desired a vacation on the other side, from where he came to this country several years ago. He will visit the Paris Salon and generally investigate the foreign field.

A. E. Schwartz, foreign representative of the American Motor Car Manufacturers' Association, who has been in New York for the past month on a business trip, will sail for Paris August 29 on the French line steamer **La Touraine.** Mr. Schwartz is taking with him several new American accessories, which he will represent abroad.

W. H. Conant, formerly manager of the vehicle battery department of the Gould Storage Battery Company, of New York, has been appointed general manager of the Pittsburg Motor Vehicle Company. The company has its plant and main offices in Pittsburg, and is manufacturing a successful type of commercial electric vehicles. Mr. Conant will open the New York offices of the company in the near future.

Manager Day, of the New York City Elmore branch, is off on a four weeks' vacation ramble, with Mrs. Day and the Misses Thomas, in one of the four-cylinder two-cycle Elmores. His route embraces Portland, Me., thence to Quebec and Montreal, down through the White Mountains, thence to the Adirondacks and westward to Lake Chautauqua, where the party will spend a week before returning to New York.

Joseph F. Gunther, who has been identified with Thomas B. Jeffery & Co. and the Rambler interests, both bicycle and automobile, since 1893, has resigned his position as manager for the Chicago branch of the Jeffery company, to take effect September 7. Mr. Gunther will assume the Chicago agency of the Apperson Bros. Automobile Co. on October 1. He is the president of the Chicago Automobile Trade Association.

H. C. Severance, formerly connected with the main office of the Hartford Rubber Works Co., Hartford, Conn., has been appointed manager of the Detroit branch, at 256 Jefferson avenue, that city. Mr. Severance has been connected with the Hartford Rubber Works Co. from his boyhood, and his recent appointment is another advancement in the line of promotions which have moved him up the ladder to one of, if not the most important branches of the Hartford company.

B. A. Gramm is the new general manager of the Logan Construction Company, Chillicothe, O., and B. E. Stevenson has become sales manager, these two replacing B. W. Twyman, who has severed his official connection with the company, although still maintaining an interest in it. F. C. Lindoerfer, who has had a thorough automobile experience in several well known factories, is to be the assistant sales manager. In addition to his duties as sales manager, Mr. Stevenson will attend to the publicity and

advertising department, with which work he has been very successful.

DEATH OF GEO. K. WHEELER.

George K. Wheeler, sales manager of the Columbus Buggy Company, Columbus, O., died suddenly of heart failure at his home in that city, Saturday, August 24, at the early age of thirty-eight. Mr. Wheeler had just completed a trip covering every large town in the United States, calling on the trade, and was at the factory all the morning on the day of his demise. He went to his home at noon, and was stricken and expired in less than two hours.

Mr. Wheeler was one of the best posted men in the country on electric vehicles, and one of the most enthusiastic advocates of their future, and his loss will be severely felt in trade circles and by his personal friends, who are legion. His remains left Columbus on Sunday, accompanied by his widow, for interment at Boston, his former home, and where his sister resides.

THE SCIENCE OF PUBLICITY.

The line of demarcation between available trade news and downright puffery publicity is not as well defined as it should be in what comes from the pens of many auto publicity purveyers. E. Ralph Estep, who has contributed some excellent chapters of Packard publicity, has made a study of the subject, as is made evident by whatever comes from his facile pen. True it is that he calls attention to a particular make of car, but he presents the subject in such an interesting manner that it is readable and interesting to the users of all kinds of cars. Estep is now located in the Auditorium tower, at Chicago, and from his lofty perch in the skies he grinds out a goodly grist of material.

NEW TRADE PUBLICATIONS.

To introduce the Holsman automobile to a wider public, the Holsman Automobile Company, of Chicago, has produced an illustrated 24-page catalogue descriptive of their improved buggyabout. The car, which is specially designed for rough work on western roads, usually more suited to the buggy than the automobile, is thoroughly described in the booklet and its special features well presented.

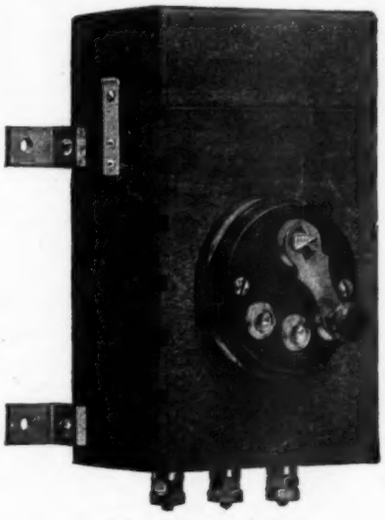
One of the most complete catalogues of automobile mountings, forgings, interior fittings and novelties has been published by C. Cowles & Co., of New Haven, Conn. Comprising about 160 pages, all illustrated, the book includes priced lists of the usual metal fittings for automobiles, in addition to the firm's special novelties and a selection of leather goods for the better class of closed cars.

Recent purchasers and operators generally of the six-cylinder Stevens-Duryea automobile will find useful information in the instruction book issued for their benefit by the Stevens-Duryea Company, of Chicopee Falls, Mass. The method pursued is to take each mechanical part separately and describe it in detail, pointing out the treatment it should receive to obtain best working results. Practical operating instructions are given and there are a number of useful hints which the beginner would do well to take to heart. The booklet is well illustrated.

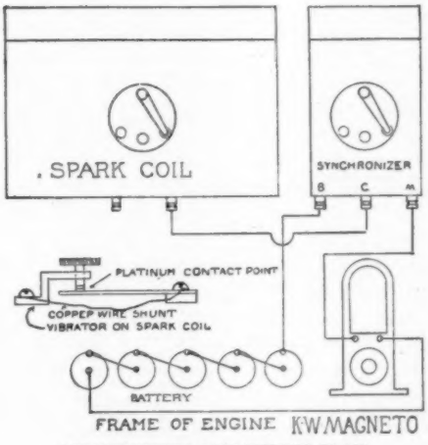
INFORMATION FOR AUTO USERS.

New Master Vibrator or Synchronizer.—The K.-W. Ignition Co., 34 Power avenue, Cleveland, O., has just brought out a device intended to eliminate difference in adjustment, as well as in the time element, or lag, of the different vibrators of the coils of multi-cylindered engines. The device consists of a well-made and rapid vibrator, mounted in a neat mahogany case, together with a powerful condenser. It is also equipped with a switch designed to use either two sets of batteries or a battery and the K.-W. magneto. It is intended to be attached to the dash, and is connected in the circuit as shown by the diagram, Fig. 2, the device itself being illustrated by Fig. 1. From the wiring dagram it will be noted that the connections are run directly from the battery to the master vibrator, while a second lead is taken from the central binding post on the latter to one of the terminals of the coil. This places the synchronizer in series with the battery and coil, or with the magneto and coil. When applied to vibrator coils the tremblers are not allowed to operate, but are short-circuited by a small piece of copper wire, as shown by the small sketch forming part of Fig. 1. Thus the current does not pass through the coil vibrators, but through this short shunt, as indicated.

This K.-W. master vibrator thus obviates any lack of synchronism that may exist in the timing of the four vibrators, and also compensates for the varying lag of four different vibrators by substituting one, thus giving exact synchronism and causing the charge to be fired in each cylinder at the same relative position of the piston, in the same manner as is accomplished by means of high-tension distributor and single coil. It possesses the advantage, however, of synchronizing the low-tenson side of the circuit, thus obviating the high-tension distributor and its attendant evils.

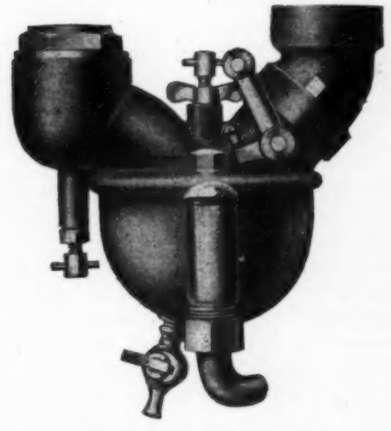


K-W MASTER VIBRATOR.

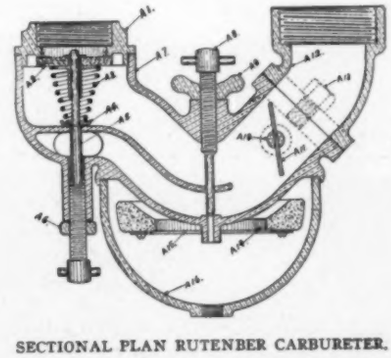


ARRANGEMENT AND WIRING PLAN.

Rutenber Carbureter.—The name Rutenber is well known to the trade throughout the country through its association with the well-known Rutenber motor, and E. A. Rutenber, one of the makers of the latter, located at Logansport, Ind., also manufacturers the Rutenber carbureter. These carbureters are made of brass and so constructed that the bowl contains the float, float-valve and all its fastenings, the float being of the concentric or annular type, with the needle valve-adjusting screw on top. The valve is made of steel for greater durability and is controlled by a hinged lever attached to the float, making it positive in its action and preventing any tendency to flood. Gasoline is supplied through a reversible union, allowing the feed-pipe to be run in the most convenient manner. The mixing chamber is semi-circular in form, with the spray nozzle at the bottom and in the center of the bowl, thus maintaining the mixture the same, regardless of the grade the car may be on at the time. It is made with vertical or horizontal outlet, and a good idea of its appearance may be obtained from the accompanying illustration.



RUTENBER CARBURETER.



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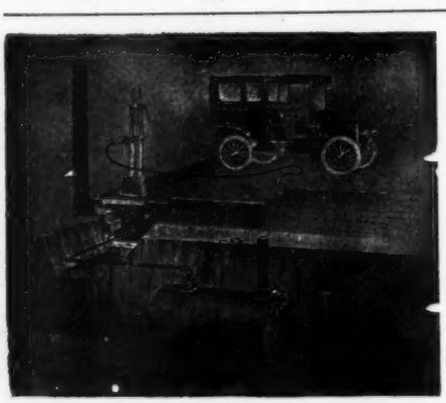

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